Cascade Steel Rolling Mills, Inc.
3200 North Hwy 99W
McMinnville, OR 97128

A Schnitzer Company

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February 13, 2023

Ms. Julia Degagné
Air Toxics Project Manager
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232

via email: Julia.degagne@deq.state.or.us

Re: Cascade Steel Rolling Mills, Inc.
CAO Emissions Inventory

Dear Ms. Degagné:

Cascade Steel Rolling Mills ("CSRM") is in receipt of your December 13, 2022 Warning Letter with Opportunity to Correct ("Warning Letter") relating to our Cleaner Air Oregon Air Toxics Emissions Inventory (the "emissions inventory") submitted to the Department on May 9, 2022. Section III of the Warning Letter identified specific items that you requested be submitted by February 13, 2023. This letter and the associated attachments constitute our complete response to your request. For ease of reference, we have reproduced verbatim each of your Section III requests below in italics followed by our response.

1.Submit to DEQ a revised Inventory (AQ520 form), along with all supporting calculations in Excel format, as well as all information as required under OAR 340-245-0040(4), including the following updates:

We respond to each segment of this question individually below. In order to assist in evaluating the facility and our submittals, we have included a document entitled "Revised Emission Inventory Supporting Information" to provide an overview as to the emission units, emission points and process flow. To assist in better understanding the facility, we have also included as Attachment A to that document a process flow diagram and as Attachment B an updated Excel spreadsheet showing our emissions calculations.

In evaluating this work please be aware that the attached inventory is not an accurate representation of the CSRM facility as it will exist when the risk assessment is performed. As you are aware, CSRM is in the process of engineering and installing additional facility controls. The clear wording of DEQ's regulations specifies that the emissions inventory is to reflect the requested PTE of the facility owner's choosing that will be evaluated through the CAO process. For CSRM, that PTE will reflect the soon to be constructed controls. We offered to sign an

agreement guaranteeing construction of the controls in a timely manner but DEQ refused. However, at DEQ's demand and insistence on rejecting proactive and well-defined emissions controls, the attached emissions inventory does not reflect the PTE as required by OAR 340-245-0040(4)(a)(B)(i)(II). We have been directed for purposes of today's submittal to not reflect either in-process controls or the requested PTE of our choosing, making today's analysis, demanded by DEQ, incorrect as well as contrary to law. Prior to completing the risk assessment, it will therefore be necessary to finalize the emissions inventory to make it consistent with the CAO regulations, *i.e*., to reflect the emission rates that CSRM intends to request be permitted under CAO. Until the emissions inventory is finalized consistent with OAR 340-245-0040(4)(a)(B)(i)(II), it will be impossible to accurately model CRSM emissions, estimate risk and propose any risk limits.

It will also be critical, prior to any modeling taking place, that CSRM establish the emission parameters for the existing facilities as well as those in the process of being constructed. Currently, those data have not been collected for either the existing buildings and emission points or the facilities currently under development. Rough estimates such as may exist at this time can significantly distort any modeling results. These parameters will be developed at a later stage in the process (i.e., in the modeling protocol). We look forward to working with DEQ as we develop these critical data.

Although not required at this stage of the process, CSRM is proactively identifying for DEQ that the company intends to prepare a Level 4 Risk Assessment. This approach is necessary because, as DEQ is well aware, the exposure assumptions incorporated into the Risk Based Concentrations ("RBCs") have significant flaws for metals facilities. These have been identified and addressed in prior CAO risk assessments accepted by DEQ and CSRM intends to proceed largely consistent with those other regulated facilities. The full details of the proposed risk assessment process will be identified in our Risk Assessment Work Plan. Because of the nature of our green steel facility and the manner in which the RBCs were developed, the only possible means of estimating risk from the facility requires use of the Level 4 process. We look forward to working with you as we proceed through that step of the process.

With those thoughts in mind, we present each of your questions and provide information to help guide you as to where in this submittal you will find the relevant information.

> *a. Roof monitor (TEU EU-3) and billet cutting (TEUs EU-10 and EU-12): use the data set "Filter Only no Blank Subtraction" instead of the "Filter Only Reagent Blank Subtraction" from the 2019 Emissions Testing report for the "Roof Monitor" and "Billet Cutting" TAC emission factors as the information provided was insufficient to support the validity of the blank corrections.*

While we do not agree that the information previously provided was insufficient to support the validity of the blank corrections, we have nonetheless used the suggested data set for "Roof Monitor" and "Billet Cutting" TAC emission factors. These data are reflected in the revised emissions inventory and supporting calculations (Attachment B) as well as the revised AQ520 form included with this letter.

b. Billet cutting (TEUs EU-10 and EU-12): update emissions to reflect existing conditions and emission points for TEU EU-10, as it is currently configured.

As noted above, OAR 340-245-0040(4)(a)(B)(i)(II) is explicit that the emissions inventory must reflect the PTE at which the source chooses to be permitted. DEQ's mandate that CSRM not reflect in its emissions inventory the PTE at which the company chooses to be permitted is contrary to the regulations and will require yet another iteration of the emissions inventory before the risk assessment can proceed. Nonetheless, in order to be responsive to DEQ's request and facilitate the review process, we have revised the inventory to be consistent with DEQ's direction. We shall submit a separate inventory at a future time that accurately reflects the PTE levels at which CSRM requests to be permitted so as to minimize the potential delay in the risk assessment process created by DEQ's request. CSRM is committed to moving the risk assessment process along at a reasonable pace and being responsive to DEQ's requests, while also ensuring that the rules are complied with.

c. Melt shop (TEU EU-1):

i. Include emission estimates for the following TACs, including any expected fugitive emissions, using emission factors listed in "Attachment A. Emission Factors for Persistent Organic Pollutants and Polycyclic Aromatic Hydrocarbons":

1. Polychlorinated dibenzo-p-dioxins (PCDDs) & dibenzofurans (PCDFs)TEQ (DEQ SEQ ID 646);
2. PCBs TEQ (DEQ SEQ ID 645);
3. Polycyclic aromatic hydrocarbons (PAHs; DEQ SEQ ID 401);
4. Benzo[a]pyrene (CASRN 50-32-8);
5. Naphthalene (CASRN 91-20-3);
6. Hexachlorobenzene (CASRN 118-74-1); and
7. Polybrominated diphenyl ethers (PBDEs; DEQ SEQ ID 401);

Emission estimates for the requested TACs have been incorporated into the emissions inventory based on the suggested source materials. As we have previously pointed out, such generic emission factors are of limited relevance to our mill and so we are in the process of finalizing a source testing protocol for agency review in which we will conduct testing for PCDDs, PCDFs, PCBs and PAHs. Therefore, please consider the attached inventory values associated with the baghouses and the Melt Shop Roof Monitor to be placeholders until accurate values are developed through site-specific testing. Including emissions estimates for the listed pollutants derived from non-source specific emission factors is potentially misleading and does not reflect the best science. As a result, the values should not be relied on for any regulatory purpose. Accurate values will be provided upon conclusion of the testing which is expected to occur in the next 8-10 weeks. A testing protocol is being submitted to DEQ under separate cover.

d. Melt shop baghouses (TEU EU-1, baghouse BH-1):

i. Include emissions for phosphorus (DEQ ID 504), for consistency with detections in the 2013 Filter Testing data. Phosphorus was detected in BH-1A,sample Run #3 at 50 mg/kg;

While there is no risk value associated with phosphorus emissions, we have included the requested information in the revised inventory and supporting calculations (see Attachment B) as well as the revised AQ520 form included with this letter.

e. Melt shop baghouses (TEU EU-1, baghouses BH-1, BH-1A, and BH-2):

i. Update fluoride (DEQ SEQ ID 239) emissions as follows:

1. Update the daily fluoride emissions calculation for the burning of baghouse bags in BH-1 to use throughput in number of baghouse bags burned instead of tons of steel produced; and

2. Apportion fluoride emissions from TEU EU-1 to baghouses BH-1, BH-1A, and BH-2, as appropriate.

ii. Update organic TAC emissions estimates to:

1. Include all TACs which have emissions information available in the "Electric Arc Furnace Baghouse Gases Emissions Test Report" (dated March 3, 1995, and provided as Attachment C);

2. Include emissions from BH-2, accounting for additional emissions expected due to the increased collection efficiency achieved with the installation of BH-2;

3. To satisfy requirements 1 and 2 above, emissions for BH-1, BH-1A, and BH-2 may be calculated as shown in Attachment D, using source test data for BH-1, documented baghouse flow rates, and the VOC calculation methodology used in the Title V Permit Review Report (page 27). Alternatively, justification may be provided for a different estimate.

iii. Update emission factors for the 7 MMBtu/hr Electric Arc Furnace burner (TEU EU-16_ng) to match the emission factors in the "Oregon DEQ 2020 Air Toxic Emissions Inventory Combustion Emission Factor Tool" for the "Natural Gas External Combustion, emission units < 10 MMBTU/hr".

The requested information related to organic TACs and natural gas emissions has been reflected in the revised inventory and supporting calculations as well as the revised AQ520 form included with this letter. In relation to the use of baghouse bags in the EAF, please note that we previously stated to DEQ in writing that CSRM ceased the practice of introducing baghouse bags into the Electric Arc Furnace ("EAF") in 2020 (see attachment H). CSRM has no intention of resuming the practice of introducing baghouse bags into the EAF and has requested that reference to the practice be removed from the Title V permit upon renewal. Including the baghouse bags in the Emissions Inventory was an error that has been corrected in the attached submittals.

The emissions inventory has also been updated to reflect Fluorides emissions from the use of flux based on available non-site specific emission factors so as to be responsive to the request. Please consider the attached inventory values associated with flux usage to be placeholders until accurate values are developed through site-specific testing. Including Fluorides emissions estimates based on non-source specific emission factors is potentially misleading and the values should not be relied on for any regulatory purpose. Accurate values will be provided upon conclusion of the testing which is expected to occur in the next 8-10 weeks. A protocol related to that testing is being submitted for agency review under separate cover.

f. Melt shop fugitive emissions (TEU EU-1, emission point MELTFUG):

i. In the supporting calculations, update the fugitive portion of the scrap billet cutting emissions (TEU EU-1, emission point MELTFUG) to use the uncontrolled emission factor rather than the controlled emission factor; alternatively fugitive emissions may be calculated separately for EU-1, EU-10, and EU-12 in both supporting calculations and the AQ520.

ii. In the supporting calculations, update the fugitive portion of the scrap billet cutting emissions (TEU EU-1, emission point MELTFUG) to correctly sum emissions from scrap billet cutting and the melt shop using consistent units (for example, pounds per tons of steel processed); alternatively fugitive emissions may be calculated separately for EU-1, EU-10, and EU-12 in both supporting calculations and the AQ520; and

iii. Update the daily Fluoride (DEQ SEQ ID 239) emissions calculation to use throughput in number of baghouse bags burned instead of tons of steel produced.

As explained n the attached document entitled "Revised Emission Inventory Supporting Information", both general scrap preparation cutting and scrap billet cutting take place in the EAF charge bay with emissions being primarily controlled by baghouses BH-1/BH-1A. This process change took place last year and is reflected in the attached inventory, supporting calculations and the revised AQ520 form.

As explained in response to the prior request, we previously informed DEQ that CSRM ceased the practice of introducing baghouse bags into the EAF in 2020 and that CSRM has no intention of resuming the practice of introducing baghouse bags into the EAF in the future. CSRM requested that reference to the practice be removed from the Title V permit upon renewal. See, Attachment H. Including the baghouse bags in the Emissions Inventory was an error that has been corrected in the attached submittals.

g. Roof monitor (TEU EU-3):

i. Update the daily emission calculations to use the daily emission factor instead of the annual emission factor; and

ii. Include emissions for mercury (CASRN 7439-97-6) as 0.00043 percent of particulate matter, as listed in CSRM's Permit Review Report (36-5034-TV-01, Page 59).

The requested updates have been reflected in the revised inventory and supporting calculations as well as the revised AQ520 form included with this letter.

h. Slag handling (TEU EU-5):

i. Update zinc (CASRN 7440-66-6) emission factors to reflect the analytical result of 160 mg/kg listed in the slag analytical report (currently the analytical result is listed as 16 mg/kg);

ii. Update the "Max Daily – Acute" emission factor to use a representative maximum daily average wind speed for unenclosed drop points; and

iii. Include emission estimates for the following TAC species, using concentrations listed in Attachment A:

1.PCDDs & PCDFs TEQ(DEQ SEQ ID 646); and

2.PCBs TEQ (DEQ SEQ ID 645);

The requested updates have been reflected in the revised inventory and supporting calculations as well as the revised AQ520 form included with this letter.

i. Gasoline Dispensing Facility (TEU EU-15):

i. Calculate VOC emissions from tank filling, breathing, and emptying using the methodology presented in AP-42, Section 7.1.3;

ii. Calculate daily VOC working losses using the attached methodology from the TCEQ (provided with DEQ's August 26, 2022 letter) -assume maximum daily emissions are equal to maximum hourly emissions multiplied by the maximum hours of tank filling. Provide justification for the worst-case liquid temperature used, or assume the TCEQ default of 95 degrees F; and

iii. Include a complete set of TACs emitted from the gasoline dispensing facility-in the absence of site-specific gasoline composition data, the TAC speciation provided with DEQ's August 26, 2022 letter may be used.

The requested updates have been reflected in the revised inventory and supporting calculations as well as the revised AQ520 form included with this letter.

j. Include estimated emissions from scrap handling and unpaved roads:

i. Use established methodologies to determine PM emissions and site-specific dust sampling analysis to speciate TACs for the following TEUs:

1.Scrap handling (permitted emission unit EU-9);and

2.Fugitive dust from unpaved roads (permitted emission unit EU-11); and

ii. The dust sampling plan must be approved by DEQ prior to sampling and should include, at a minimum, heavy metal TACs, fluorides, PCDD/PCDFs, and PCBs.

Consistent with DEQ's February 8, 2023 letter approving our Dust Sampling and Analysis Plan, CSRM collected and analyzed fines collected in the truck sweep off area for total metals per EPA Method 6020B so as to characterize fugitive dust from scrap handling. The sampling report is included as Attachment G to this submittal. For unpaved roads (which are constructed with EAF slag), CSRM has used slag compositional data to characterize fugitive dust from unpaved roads. These values are reflected in the updated emissions inventory and associated supporting calculations as well as the revised AQ520 form. We appreciate DEQ's expedited review and approval of our Dust Sampling and Analysis Plan.

k. Revise the Inventory to include emissions from maintenance shops and routine maintenance activities (including incidental welding and miscellaneous chemical usage), or provide justification for exemption per OAR 340-245-0060(3)(a).

An assessment of the TEU status of the previously exempt Categorically Insignificant Activities (including maintenance shops and routine maintenance activities) is included as Attachment I to this submittal. Based on that analysis, CSRM believes that these activities are exempt per OAR 340-245-0060(3)(a) with the exception of Electric Arc Welding which has been added to the emissions inventory as TEU EU-17.

l. Revise the AQ520 as follows:

i. Update the "Reference/Notes" column in Tab 3 to fully specify the source of the emission factor for each TEU and TAC (for example,AP-42, WebFire, specific source tests, etc.) and any related notes (for example, control efficiency references); and

ii. Update the "Control Efficiency" column in Tab 3 to specify the total combined control efficiency for each pollutant from the specified TEU and TAC, when the control efficiency is known or estimated.

The requested updates have been reflected in the revised AQ520 form included with this letter.

2. Please provide the following additional documentation to support the emissions inventory:

a. For all raw materials used, including but not limited to the slag oxidizing agent and molten metal additives:

i. Safety Data Sheets; and

ii. Estimated maximum annual and daily usage rates;

The requested raw material usage information and Safety Data Sheets are included as Attachment J to this submittal.

b. Substantiation for emissions of fluorides (DEQ SEQ ID 239), including testing data used in the development of permitted emission factors, as well as an explanation of why the emission factor listed in AP-42, Section 12.5.1, Table 5-9 (0.059 pounds per ton steel produced) is not representative of emissions from the EAF and melt shop;

CSRM has reviewed the literature and believes that the testing performed by Nucor at a similar facility is the best representation of Fluorides emissions from the melt shop available prior to completion of site-specific testing. Nucor's testing reflects current industry practice and controls while AP-42 data are out-of-date and of questionable quality. As EPA notes in Section 12.5.1.4.1 of the Minimill chapter of AP-42, "Minimills exhibit significant variability in product mix, configuration, and production process, all of which contribute to the type and rate of emissions." The AP-42 discussion of all of the ways in which emissions can vary from minimill to minimill spans two pages. EPA specifically comment that Fluoride emissions "would be similarly influenced by these variables, particularly the type of product being manufactured." Given these caveats, the lack of knowledge of the product mix and mill configuration for the mills reflected in AP-42, and the fact that EPA gives the Fluorides emission factor a "D" rating, we believe that AP-42 is not a suitable emission factor source.

The emissions inventory has been updated to reflect Fluorides emissions from the use of flux based on the Nucor emission factor so as to be responsive to the request. However, in light of

EPA's cautions in AP-42, please consider the attached Fluorides inventory values to be placeholders until accurate values are developed through site-specific testing that are reflective of our product mix, configuration, and production process. Including Fluorides emissions estimates based on non-source specific emission factors is potentially misleading and the values should not be relied on for any regulatory purpose. Accurate values will be provided upon conclusion of the testing which is expected to occur in the next 8-10 weeks. A stack testing protocol is being submitted for agency review under separate cover.

> *c. A detailed description of the wastewater system, including a process flow diagram, characterization of wastewater including available analytical data, and a description of each process unit and wastewater point of use;*

As requested, a process flow diagram and description of the wastewater treatment system, as well as a representative Discharge Monitoring Report ("DMR") have been provided as Attachment K to this submittal. Wastewater from the wastewater treatment system is not reused on site—it is discharged consistent with our permit.

> *d. A detailed description of the slag wetting process, including:*
> *i. Location;*
> *ii. Whether process is batch or continuous;*
> *iii. Approximate temperature of slag;*
> *iv. Source of water used and method of wetting; and*
> *v. Amount of water applied, per ton slag handled; and*

The slag wetting process is a batch process conducted along a wall just northeast of the Melt Shop. The answers to each of your questions regarding this process are provided in the attached spreadsheet.

> *e. Description of process assumptions used to determine the 90% effectiveness factor for oxidation of hydrogen sulfide from the data reported in Rehmus et al, 1973.*

After reviewing the Rehmus paper, we have decided to reduce the effectiveness factor for oxidation of hydrogen sulfide to 75%.

* * *

CSRM hopes that this information assists DEQ in concluding its review of our emissions inventory. We have made every effort to fully respond to the questions with the information we have available at this time. However, we continue to maintain that it is impossible to accurately respond to all of the questions without completing the planned site-specific emissions testing to obtain accurate and science-based emission data. CSRM has seen how DEQ has allowed other CAO sources to complete site-specific testing to develop robust, verifiable data for use in their emission inventories. This approach is far superior to the use of default emission factors that were derived from tests on or information from different sources. Nonetheless, in order to be responsive to your questions, we have used non-site specific emission factors pending completion of the pending testing.

As explained above, CSRM is similarly concerned that the attached emissions inventory is not consistent with the mandate in OAR 340-245-0040(4)(a)(B)(i)(II) to reflect the PTE at which the facility chooses to be permitted. We are submitting the emissions inventory under the threat of enforcement, but this inventory is neither consistent with DEQ's rules nor consistent with the emission rates that are intended for use in the risk assessment. CSRM reserves the right to amend the inventory to be consistent with the plain language in the regulations prior to proceeding with the risk assessment process.

We appreciate maintaining a productive dialog as we work with DEQ to finalize our emissions inventory using the best data and science and in an expeditious manner.

Sincerely,

Jim Spahr

Jim Spahr

cc: Daniel Lee
Tim Sturdavant
Stanley N. Alpert
Tom Wood
John Browning