Oregon

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Sent via email only

Scott Anderson,

Covanta Marion, Inc. (Covanta) in Brooks, OR was called in to the Cleaner Air Oregon (CAO) program on August 13, 2020, with an initial Emissions Inventory (Inventory) due date of November 11, 2020. DEQ granted a 17-day extension of the initial due date, and Covanta submitted the Inventory on November 24, 2020. DEQ completed an initial review and responded on March 11, 2021, requiring source testing of the Municipal Waste Combustors, MWC-1 and MWC-2, for the purpose of emission factor development for use in a revised Inventory. Source testing was initially required to be completed no later than June 21, 2021. At Covanta's request, DEQ granted two extensions of the source testing deadline (to December 31, 2021 and March 31, 2022), and source testing was completed in December 2021 and March 2022. On August 19, 2022, DEQ approved the source testing and outlined requirements for the revised Inventory to be submitted no later than September 19, 2022. Covanta requested and received an extension of the due date for the revised Inventory to October 19, 2022, in order to gather more accurate and new data for Toxics Emissions Units (TEUs) which were not included in Covanta's November 24, 2020 Inventory submittal, and to compile emissions estimates for the Municipal Waste Combustors (MWCs).

Covanta submitted information and a revised Inventory on October 18, 2022. Based on review of the October 18, 2022 Inventory submittal, DEQ is providing the following general and specific comments:

I. General Comments

Exempt TEUs: DEQ's August 19, 2022 letter requested that Covanta include additional TEUs in the Inventory, including maintenance and maintenance shop activities, cooling towers, ash handling, and any other categorically insignificant activities which are not exempt TEUs per OAR 340-245-0060(3)(b). DEQ also shared the Exempt TEU Reporting document, which is intended to assist sources in identifying activities which DEQ may designate as exempt because they do not emit TACs in amounts that materially contribute to source risk. In Attachment 5 of the October 18, 2022 submittal, Covanta indicated that the following TEUs should be considered exempt:

- Ash handling: DEQ may consider this TEU exempt, with certain provisions. Based on the information provided in the Inventory, ash handling activities potentially qualify as an exempt TEU under 340-245-0060(3)(b)(OO) ("Ash piles maintained in a wetted condition and associated handling systems and activities"). If Covanta chooses to claim this exemption, permit conditions will be considered at the completion of the CAO risk assessment to ensure the wetted condition of the ash piles.
- Storage silos: The two lime storage silos and the carbon storage silo are exempt TEUs based on the information Covanta provided in Attachment 5 of the October 18, 2022 submittal, under OAR

[340-245-0060(3)(a)](). Calculations demonstrating that Toxic Air Contaminant (TAC) emissions from these TEUs are not likely to materially contribute to risk are provided in Attachment A.

- Cooling towers: The cooling towers are an exempt TEU. TACs present in the cooling tower chemicals (sodium hydroxide and sulfuric acid) are not expected to be emitted at the pH range of the cooling water.
- Maintenance activities (including chemical usage and welding) and ammonia storage: Covanta did not provide sufficient information for DEQ to determine whether these TEUs are exempt under [OAR 340-245-0060(3)(a)](). Covanta must provide additional emissions information, as specified in the Specific Comment section below.

Selected Emission Factors for MWCs: In the Inventory, emission factors for TACs emitted from the MWCs are based on either two source tests events (for halides, hydrogen halides and ammonia) or a single source test event (for all other TACs). This data may not adequately capture all emissions profiles that could result during operation, due to variations in operating conditions and waste characteristics that can impact TAC emission rates. To offset this uncertainty Covanta has used conservative assumptions to develop emission factors for the MWCs, including the following:

- Source test results are multiplied by safety factors as follows:
  - PCB emission factors are 100 times the source test results;
  - PCDD/PCDF emission factors are 50 times the source test results;
  - PAH emission factors are at least 25 times the source test results;
  - Chlorine and hydrogen chloride emission factors are 10 and 3.5 times the highest source test results, respectively;
  - Ammonia, hydrogen fluoride, hydrogen bromide, and bromine emission factors are 100 times the source test results;
  - Most organic TAC emission factors are 100 times the source test results; and
  - Most metal TAC emission factors are at least 80 times the source test results (lower safety factors are used for chromium VI, arsenic, and cadmium).
- Covanta does not assume zero emissions for TACs that measured below the limit of detection during all three runs of the source test, but bases an emission factor on the method detection limit and applies a safety factor.

DEQ agrees that this approach and the proposed emission factors are appropriate for the purposes of a CAO health risk assessment, recognizing that there are significant challenges in gathering data from a single stack test or set of stack tests that are fully representative of the range of conditions under which the MWCs operate. DEQ may consider permit conditions, including monitoring requirements and operational limitations, after completion of the CAO risk assessment to ensure that the risk from Covanta remains below the risk modeled in the risk assessment.

Capacity Emissions: Covanta has provided three sets of emissions data in the Inventory: "Actual", "Requested Potential to Emit", and "Capacity" emissions. Under CAO rules, Covanta may choose to have their CAO risk assessment and any resulting permit conditions based on any of these three emissions scenarios. As part of the Inventory review, DEQ evaluates if the Capacity emissions estimates represent "the maximum regulated pollutant emissions from a stationary source under its physical and operational design," as defined in [OAR 340-200-0020(20)](). This is done in order to allow a source to be determined to be a de minimis source under [OAR 340-245-0050(7)]() if the source risk does not exceed the Source Permit Level [[OAR 340-245-8010 Table 1]()].

DEQ appreciates the difficulty in demonstrating capacity for the MWCs and that Covanta has included safety factors for the emission estimates from the MWCs to account for variability in these emissions; however, based on the highly variable nature of the combustion feedstock (e.g., municipal solid waste,

industrial waste, regulated medical waste, and liquid wastes), the composition and properties of the feedstock (e.g., metals, halide, and heat content), the operational constraints inherent in the source tests used to develop emission factors, and the variability observed across annual source testing data, DEQ is unable to establish that the emissions submitted for the MWCs satisfy the definition of Capacity. Therefore, if the source risk from your facility does not exceed the Source Permit Level, your facility cannot be determined to be a de minimis source under OAR 340-245-0050(7) and a Toxics Air Contaminant Permit Addendum could be issued pursuant to OAR 340-245-0100 to provide compliance, monitoring, recordkeeping, and reporting requirements.

II. Specific Comments

DEQ has determined that, in accordance with OAR 340-245-0030(2), the following information, corrections, and updates are required by **May 4, 2023**, in order to approve the Inventory:

1. Update the process flow diagram (PFD) to:
   a. Include all emissions producing activities and expected release points for all fugitive and non-fugitive emissions, including:
      i. The emergency fire pump (TEU RICE);
      ii. Labels for all ash handling conveyors and transfer points, indicating whether conveyors are fully enclosed, partially enclosed, or open to the atmosphere; and
      iii. Locations and method of ash handling controls (e.g. water sprays); and
   b. Label emissions producing activities with TEU IDs corresponding to the AQ520 form.
2. Include all TEUs in the Inventory supporting calculations and AQ520, and include emissions estimates for all non-exempt TEUs.[1] Based on the information provided to date, the following activities are not necessarily exempt TEUs. Please revise the Inventory to designate TEUs and include TAC emissions from:
   a. Routine chemical usage (for example, for maintenance and maintenance shop activities):
      i. Report chemical usage and emissions from any regularly scheduled maintenance activities, including annual maintenance conducted on site by firms contracted by Covanta;
      ii. Provide Safety Data Sheets (SDSs) for all products used, labeled so that each can be matched with the emissions estimates; and
      iii. Emissions may be estimated on a conservative basis using the best available information from maintenance plans or recent years' maintenance records;
   b. Welding, including but not limited to welding occurring internal to the boiler and welding occurring in the maintenance shop:
      i. Use the San Diego Air Pollution Control District's Welding Operations methodology[2] to develop emissions estimates for all TACs present in welding products – demonstrable capture and control efficiencies may be included for controlled welding activities; and
      ii. Provide SDSs for all products used, labeled so that each can be matched with the emissions estimates; and
   c. Material storage: for the aqueous ammonia storage tank:
      i. Provide the tank capacity and maximum potential daily and annual product throughputs; and

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[1] DEQ's Cleaner Air Oregon Exempt TEU Reporting document may assist in identifying activities which are considered categorically insignificant but are not exempt from CAO reporting. Emissions information may consist of a quantitative demonstration that all TACs emitted from a TEU have emissions below the thresholds listed in this document; in this case DEQ will consider exemptions for individual TEUs.

[2] San Diego Air Pollution Control District, Welding Operations, Revised July 11, 2022. Available at: https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/welding/APCD-Welding-Operations.pdf [Accessed January 6, 2023).

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        ii.   Estimate ammonia (CASRN 7664-41-7) emissions, which may include evaporative losses during storage, transfer, and tank filling.

3. Update the MWC emission factors in Tab 3 of the AQ520 form as follows:
    a. Remove the data for DEQ IDs "401TEQ" and "401" for polycyclic aromatic hydrocarbons (total PAHs (excluding Naphthalene));
    b. Report mass emissions in pounds for the following polycyclic aromatic hydrocarbons by individual CASRN:
        i. 2-Methyl naphthalene (CASRN 91-57-6);
        ii. Acenaphthylene (CASRN 208-96-8);
        iii. Acenaphthene (CASRN 83-32-9);
        iv. Fluorene (CASRN 86-73-7);
        v. Phenanthrene (CASRN 85-01-8);
        vi. Anthracene (CASRN 120-12-7);
        vii. Fluoranthene (206-44-0)
        viii. Pyrene (CASRN 129-00-0);
        ix. Benz[a]anthracene (CASRN 56-55-3);
        x. Chrysene (CASRN 218-01-9);
        xi. Benzo[b]fluoranthene (CASRN 205-99-2);
        xii. Benzo[k]fluoranthene (CASRN 207-08-9);
        xiii. Benzo[e]pyrene (CASRN 192-97-2);
        xiv. Perylene (CASRN 198-55-0);
        xv. Indeno[1,2,3-cd]pyrene CASRN (193-39-5);
        xvi. Dibenz[a,h]anthracene (CASRN 53-70-3); and
        xvii. Benzo[g,h,i]perylene (CASRN 191-24-2);
    c. Include emissions from m-xylene (CASRN 108-38-3) and p-xylene (CASRN 106-42-3), which were detected in the source test but not included in the Inventory. Alternatively, all xylenes may be reported as "xylene (mixture), including m-xylene, o-xylene, p-xylene" (CASRN 1330-20-7);
    d. Some TACs have been reported twice in the Inventory for each MWC due to their inclusion in two source test methods. To avoid double-counting, remove one of the emission factors for:
        i. 1,3-Dichlorobenzene (CASRN 541-73-1);
        ii. p-Dichlorobenzene (1,4-dichlorobenzene) (CASRN 106-46-7); and
        iii. 1,2-Dichlorobenzene (CASRN 95-50-1); and
    e. Correct emissions information to correctly reflect the source test data for 2,4,6-trichlorophenol (CASRN 88-06-2).

4. Correct emissions information in the supporting calculations ("Chloros" tab) and AQ520 as needed to correctly reflect the source test data, TAC names, and CASRNs for:
    a. 1,2,4-trichlorobenzene (CASRN 120-82-1); and
    b. 2,4,6-trichlorophenol (CASRN 88-06-2).

5. Describe the method of disposal for spent baghouse fabric filter bags – if bags are burned in the MWCs, describe the process for transporting the bags from the baghouses to the MWCs.

6. Update the AQ520 form as follows:
    a. Update Actual Annual and Maximum Daily TEU activity values on Tab 2 to reflect actual production activities and usage for calendar year 2019, the calendar year preceding Covanta's CAO call-in date (see OAR 340-245-0040(4)(B)(i)(I));
    b. Update the Maximum Daily Actual and Requested Potential to Emit (RPTE) activity values for the AUX-1 and AUX-2 TEUs on Tab 2 as follows:
        i. Ensure that they do not exceed the equipment's daily operational capacity and provide calculations demonstrating this; and

   ii. Update RPTE to be equivalent between MWC-1 and MWC-2, or provide a reason for the difference between them – our current understanding is that the two MWC units are equivalent in operation and design;

  c. Include benzo(a)pyrene (CASRN 50-32-8) emissions for the RICE TEU, using an emission factor of 0.0000355 pounds per thousand gallons of diesel fuel (source: Cleaner Air Oregon FAQ: "How should I estimate emissions from diesel emergency generators at my facility?"); and

  d. Remove activity information listed in the "Annual Capacity" and "Max Daily Capacity" columns on Tab 2 and the Capacity emissions on Tabs 3 and 5.

7. Update the supporting calculation workbook as follows:

  a. On the "Acid Gases Ammonia" tab, update the reference in footnote 4 to reflect the correct submittal dates for both source tests used; and

  b. On the "Aldehydes + VOCs" tab, update the reference in footnote 4 to reflect the correct submittal date for the source test used.

DEQ is requesting that you submit additional information to complete your 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.

DEQ remains available to discuss this information request with you and answer any questions you may have. Failure to provide additional information, corrections, or updates to DEQ by the deadlines above may result in a violation of OAR 340-245-0030(1).

If you have any questions regarding this letter please contact me directly at 503-866-9643 or julia.degagne@deq.oregon.gov, and I look forward to your continued assistance with this process.

Sincerely,

Julia DeGagne

Julia DeGagné
Air Toxics Project Manager

Enc: Attachment A – Storage Silo TAC Emission Calculations

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