



Oregon

Tina Kotek, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

February 6, 2024

Scott Austin
GP Toledo
Georgia-Pacific Toledo LLC
1400 SE Butler Bridge Road
Toledo, OR 97391
Sent via email only

Scott Austin,

DEQ received the submittal of the Cleaner Air Oregon (CAO) Emissions Inventory (Inventory) for the Georgia-Pacific Toledo LLC (GP Toledo) in Toledo, OR on May 27, 2022, and has completed an initial review.

In accordance with [Oregon Administrative Rule \(OAR\) 340-245-0030\(2\)](#), DEQ has determined that the following additional information, corrections, and updates to the Inventory are required by May 6, 2024:

1. Update the AQ520 as follows:
 - a. List Toxics Emissions Units (TEUs) that are exempt under OAR 340-245-0060(3)(a) on Tab 2 (exempt TEUs must be included in the Inventory but emissions do not need to be quantified or included on Tab 3);
 - b. Include a “Max Daily – Acute” emission factor for each line on Tab 3;
 - c. Update Column E of Tab 2 (Stack or Fugitive ID) to indicate the stack or vent ID where the emissions units release; and,
 - d. Please confirm if the source would like to be permitted at requested potential to emit or capacity activity levels - if permitting at capacity, GP Toledo must submit manufacturer specifications to confirm any physical limitations of the TEUs and activity levels for DEQ review and approval.
2. Toxics Emissions Units (TEUs):
 - a. In accordance with [OAR 340-245-0040\(4\)\(a\)\(A\)](#), include the following TEUs in the Inventory – the Title V Operating Permit emission unit IDs are provided here for consistency:
 - i. Landfill – EUSWL, if applicable includes toxic air contaminants (TACs) associated with the landfill and plant activities deposited on unpaved roads at the landfill;
 - ii. Green liquor system – EU101;
 - iii. Lime Mud Handling System – EU102;
 - iv. Semi-chem digester system – EU119; and
 - v. Chip Bin – EU118.
 - b. Add any of the following processes to the Inventory that occur at the facility:
 - i. Saltcake mix tanks;
 - ii. Chlorine dioxide generator scrubbers;
 - iii. UNOX systems;
 - iv. White Liquor Oxidation Tanks;
 - v. Oxygen Delignification Systems;
 - vi. Semi-chemical pulp mill diffusion washer; and
 - vii. Deknotters.

- c. Provide supporting data to verify the following emission units are exempt TEUs as defined in [OAR 340-245-0020\(19\)](#)¹:
 - i. Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids & on-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fuel of the facility's fleet vehicles:
 1. Please confirm diesel is stored at ambient pressure (along with ambient temperature); and
 2. Please provide data on the number of tanks, tank capacities, and material throughputs for diesel, lubricants, and oils;
 - ii. Maintenance and repair shop chemical usage. Documentation should include, but may not be limited to: Safety Data Sheets for all products used, past usage data, assumptions used to determine maximum potential usage rates, and any calculations used to compare usages against the thresholds listed in DEQ's Cleaner Air Oregon Exempt TEU Reporting document¹.
 - d. Industrial Cooling Towers are not categorically exempt from CAO. Please include these towers in the Inventory or provide additional data, such as SDSs, to verify these emission units are exempt per [OAR 340-245-0060\(3\)\(a\)](#).
 - e. Include fugitive emission estimates from TEUs in the Inventory.
3. Process flow diagram:
 - a. Update the process flow diagram with sub-labels for TEUs to match the Emissions Inventory (for example, label EU126A, EU126B, EU126C, EU126D, and EU126E instead of labeling them all EU126).
 - b. Update the process flow diagram to include vent or stack IDs.
 4. Site diagram: Please provide a site diagram that includes the TEU IDs and locations as well as the vent or stack IDs and locations.
 5. Safety Data Sheets: Provide Safety Data Sheets (SDSs) and annual, as well as maximum daily usage rates, of all chemicals introduced throughout the system.
 6. Monitoring data:
 - a. Provide total reduced sulfur (TRS) continuous emissions monitoring system (CEMS) data used for the following TEUs:
 - i. EU1;
 - ii. EU2;
 - iii. EU3;
 - iv. EU14-B;
 - v. EU15;
 - vi. EU16-B; and
 - vii. EU17.
 - b. Additionally, use the highest daily TRS emission rate for the maximum daily emission factor for the above TEUs.

¹ GP Toledo must refer to OAR [340-245-0060\(3\)](#) when designating TEUs as exempt. See [Cleaner Air Oregon Exempt TEU Reporting document](#) for additional information. Emission units listed as "categorically insignificant" in OAR 340-200-0020(23) but not also listed in OAR 340-245-0060(3)(b) are not considered categorically exempt units under CAO and must be included in the Inventory.

7. NCASI Reports: Provide the following National Council for Air and Stream Improvement (NCASI) reports or tables to confirm the representativeness of emissions estimates used in the Inventory:
 - a. Technical Bulletin No. 957 (TB957): “Spatial Ambient Air Sampling and Analysis Methods for Quantifying Reduced Sulfur Compounds and Methane Emissions from Kraft Mill Wastewater Treatment Plants”.
 - b. The following Appendix tables from Technical Bulletin No. 1050 (TB1050): “Compilation of Air Toxics Emissions Data for Pulp and Paper Sources – Publication Accompanying the 2018 Air Toxics Emissions Data”:
 - i. Tables A6a-A6d;
 - ii. Table A20; and
 - iii. Table B5.
8. Welding:
 - a. Update the level 1 risk assessment for welding activities to include the following:
 - i. Provide documentation on how maximum daily usage rates are determined – for example, a maximum daily usage rate equal to the annual usage rate divided by 365 (or number of working days) will not be accepted unless it can be shown that actual maximum daily usage will never exceed that amount; and
 - ii. Include all welding rod types and throughputs in the level 1 risk assessment, even for rods that are below the reporting thresholds.
 - b. Provide SDSs for all welding rods used at the facility.
 - c. Include chromium VI (CASRN 18540-29-9) emissions estimates in the Inventory. If a chromium VI emission factor does not exist, use a total chromium to chromium VI conversation rate of 5% for GMAW, 55% for SMAW, 0.05% for SAW, and 10% for FCAW per AWMA (2012)².
9. Juno System (EU 144): Please provide the following:
 - a. Supporting documentation for the estimated 70% control efficiency of formaldehyde (CASRN 50-00-0) and methanol (CASRN 67-56-1) for the packed bed scrubber and activated carbon controls.
 - b. Plant test data to support the emission factors provided.
 - c. The basis for the assumption that formaldehyde and methanol are the only TACs being emitted from this TEU.
 - d. Fugitive emission estimates for this process in the Inventory.
10. Kraft Pulp Mill:
 - a. Include emissions estimates for intermittent venting to the atmosphere (as indicated on the process flow diagram) for the Blow Heat Accumulator, Foul Condensate, Blow Heat Evaporator, and Turpentine System (all currently labeled EU126).
 - b. Include hydrogen sulfide (CASRN 7786-06-4) emissions for TEUs in this category that have reduced sulfur emission information in NCASI TB1050 and provide justification for emission factors used.
 - c. Kraft Prewasher Screens (EU114): Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emission estimates in the Inventory.
 - d. Kraft Brownstock Washers (EU128):

² Available online: <https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/welding/Development-of-Welding-Emission-Factors-for-Cr-and-Cr-VI.pdf>

- i. To support using NCASI emission factors for brownstock washers using “clean condensates” (i.e., condensates containing less than 300 ppm methanol), provide analytical data of the shower water supporting that the methanol (CASRN 67-56-1) concentration is less than 300 ppm or revise the emission factors to those provided in TB1050 Tables 4.11 and 4.12;
 - ii. Please include acetone (CASRN 67-64-1), cresols (CASRN 1319-77-3), and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory;
 - iii. Please provide supporting documentation for the emission factor for hexachloroethane (CASRN 67-72-1); and
 - iv. Please provide source test report and data from the source test performed on November 5-6, 2014, for the methanol (CASRN 67-56-1) emission factors used.
- e. Kraft Digesters (EU126): Provide clarification on why the activity information (tons ADTUBP per year and tons ADTUBP per day) varies:
- i. Between EU126-A, EU126-B, EU126-C, and EU126-D in the Inventory; and
 - ii. From the annual production rate listed in the Review Report for Permit Number 21-0005-TV-01.
- f. NCG LVHC Combined Header (EU126-A): Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory.
- g. NCG Blowheat Accumulator (EU126-B): Include acetone (CASRN 67-64-1), cresols (CASRN 1319-77-3) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory.
- h. NCG Blowheat Evaporator (EU126-C): Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory.
- i. Turpentine Decantor (EU126-D): Provide supporting documentation for the methanol (CASRN 67-56-1) emission factor.
- j. Include emission factors or supporting documentation that the concentrator hot wells, concentrator seal tanks, and concentrator surface condensers do not materially contribute to risk (Appendix D of TB1050) and can be determined to be Exempt TEUs.
- k. Kraft Batch Digester Fill exhausts (EU125): Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory.
- l. Kraft Recovery Furnace Black Liquor Solids (EU14B and EU16B):
- i. Provide furnace specifications supporting that this has a Direct Contact Evaporator; and
 - ii. Include emissions estimates for the following toxic air contaminants (TACs) in the Inventory for these TEUs:
 - 1. acetone (CASRN 67-64-1);
 - 2. aluminum and compounds (CASRN 7429-90-5);
 - 3. cresols (CASRN 1319-77-3);
 - 4. 1,2-dichloroethylene (CASRN 156-60-5);
 - 5. molybdenum trioxide³ (CASRN 1313-27-5); and
 - 6. thallium and compounds (CASRN 7440-28-0).

11. Semi-Chem Mill:

- a. Provide justification why emission factors for ‘sodium carbonate cook’ pulping process were used instead of the ‘green liquor cook’ pulping process.
- b. Semi-chemical pulp washer system (EU8):
 - i. Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory; and

³ Convert the emission factor for molybdenum (CASRN 7439-98-7) to molybdenum trioxide by using the ratio of molecular weights.

- ii. Confirm the units presented in Tabs 2 and 3 of the Inventory – emission factors from NCASI TB1050 are in lb/ADTP and units presented in Tabs 2 and 3 of the Inventory are in ADTUBP.
12. Lime Kilns (EU1, EU2, EU3): Include emissions estimates for the following TACs in the Inventory for these TEUs:
- a. acetone (CASRN 67-64-1);
 - b. aluminum and compounds (CASRN 7429-90-5);
 - c. 1,2-dichloroethylene (CASRN 156-60-5);
 - d. molybdenum trioxide³ (CASRN 1313-27-5); and
 - e. thallium and compounds (CASRN 7440-28-0).
13. Smelt Dissolving Tanks (EU15 and EU17):
- a. Please provide supporting documentation for the statement that, “For sources using only fresh water, emissions of other organic compounds are zero per NCASI” – this information is not provided in TB1050.
 - b. Please confirm that only fresh water is used in this process. If not, please include emissions from other organic compounds as discussed in 13.a. above.
 - c. Include emissions estimates for the following TACs in the Inventory for these TEUs:
 - i. aluminum and compounds (CASRN 7429-90-5);
 - ii. molybdenum trioxide³, (CASRN 1313-27-5); and,
 - iii. thallium and compounds (CASRN 7440-28-0).
 - d. Please provide the TRS source test reports for source tests performed 2010-2020, for the hydrogen sulfide (CASRN 7786-06-4) emission factor used.
14. Slaker/Causticizer (EU103):
- a. Include 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory.
 - b. Please provide supporting documentation that “For sources using only fresh water, emissions of other organic compounds are zero per NCASI.” – this information is not provided in TB1050.
 - c. Please confirm that only fresh water is used in the causticizing area processes.
 - d. Include emission estimates for the following processes (TB1050 Tables 4.69, 4.70, and 4.73 through 4.82):
 - i. slakers;
 - ii. processing of green liquor (clarifiers, storage and surge tanks, dregs filters);
 - iii. white liquor (causticizer tanks, clarifiers, pressure filters, storage tanks); and
 - iv. lime mud (mix tanks, dilution tanks, storage tanks, pressure filters, precoat filters, filter vacuum pump exhausts).
15. OCC Pulping Plants (EU80-81): Submit mill-specific information detailed in TB1050 Table B5 and supporting documentation from the Georgia Pacific Toledo facility supporting the use of these emission factors.
16. Paper Machines (EU105 through EU110):
- a. Include 1,2-dichloroethylene (CASRN 156-60-5) emission estimates in the Inventory.
 - b. Confirm the following operational configurations for the paper machines and if these configurations are expected to change in the future:
 - i. Paper Machine 1 is used exclusively for unbleached linerboard;
 - ii. Paper Machine 2 is used exclusively for Semi-chem corrugated; and
 - iii. Paper Machine 3 is used exclusively for 100% Recycle.

- c. Unbleached Paper Machines (EU105-U through EU110-U): Provide supporting documentation on the white water methanol (CASRN 67-56-1) concentration at the facility.
 - d. Semi-Chemical Paper Machines (EU105-S through EU110-S):
 - i. Provide supporting documentation on the white water methanol (CASRN 67-56-1) concentration at the facility; and
 - ii. Include acetone (CASRN 67-64-1) emissions estimates in the Inventory.
 - e. Recycled Fiber Paper Machines (EU105-R through EU110-R): Provide supporting documentation for the emission factor for propionaldehyde (CASRN 123-38-6).
17. Pulp Storage Tanks (EU113-1, 113-2 and 117):
- a. Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Emissions Inventory.
 - b. For EU117, use emission factors from TB1050 Table 6.4.
 - c. For EU113-1, to use this storage tank for either unbleached pulp or Semi-Chemical pulp, use the higher of the emission factors presented in TB1050 Tables 4.45 and 4.46 (for High Density Unbleached Pulp Storage Tanks) or TB1050 Table 6.4 (for Semi-Chemical Pulp Mill High Density Storage Chest). If no emission factor is presented for the unbleached pulp storage, use the semi-chemical pulp storage emission factor.
18. Liquor Storage Tanks:
- a. Heavy black liquor storage tanks and heavy black liquor oxidation vent (EU5-1, EU5-2 and EU5-3):
 - i. Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory; and
 - ii. Include the Heavy Black Liquor Deaerator Tank in the Inventory or provide supporting documentation that this unit does not contribute materially to risk.
 - b. Weak black liquor storage tanks (EU123A-EU123C):
 - i. Include acetone (CASRN 67-64-1) and 1,2-dichloroethylene (CASRN 156-60-5) emissions estimates in the Inventory; and
 - ii. Include the Knot Spill Collection Tank and 35' Weak Black Liquor Tank in the Inventory or provide supporting documentation that these units do not contribute materially to risk.
 - c. Include the Green Liquor Storage Tanks in the Inventory or provide supporting documentation that this unit does not contribute materially to risk.
 - d. Include the White Liquor Storage Tanks in the Inventory or provide supporting documentation that this unit does not contribute materially to risk.
19. Boilers:
- a. DEQ's approved natural gas combustion emission factors for boilers are available at the Air Toxics Emissions Reporting website⁴. Please incorporate emission factors from this spreadsheet into the Inventory based on the heat input capacity of the boilers.
 - b. Include benzo(a)pyrene (CASRN 50-32-9) for all natural gas boilers in the Inventory; use an emission factor of 1.20E-6 lb/MMscf⁵.
 - c. Provide manufacturer specification for all boilers to confirm the heat input capacity (MMBTU).
 - d. Include hydrochloric acid (CASRN 7647-01-0) and hydrogen fluoride (7664-39-3) emissions estimates from TB1050 and for the following TEUs:
 - i. Natural Gas Fired Boilers (EU14G and EU16G);

⁴ Available here: <https://www.oregon.gov/deq/aq/Documents/AQ104B-ToxicsATEICombustionTool.xlsx>

⁵ EPA AP-42 Chapter 1.4, Table 1.4-3: Emission Factors for Speciated Organic Compounds from Natural Gas Combustion. Available here: <https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf>

- ii. Power Boiler No. 4 (EU11); and
- iii. Power Boiler (EU13, EU18, EU22).

20. Diesel and Natural Gas Emergency Engines: Use emission factors available in DEQ's Combustion Emission Factor Search Tool⁴.

21. Wastewater Treatment Plant (WWTP) (EU129-A through EU129-E):

- a. Include the following TEUs to the WATER9 analysis and Inventory, or provide justification for exemption or exclusion (for example, indicate that the unit has been decommissioned):
 - i. The bar screen upstream of the primary clarifier;
 - ii. The sidehill screens upstream of the load leveling pond;
 - iii. The screen downstream of settling pond; and
 - iv. Any other channels, sumps, or basins that are open to the atmosphere.
- b. Provide the following information to support the WATER9 analysis:
 - i. A detailed process flow diagram showing all WWTP processes and influent sources from the facility and showing which plant processes feed which WWTP units, and at what location;
 - ii. A map or figure indicating the physical locations of all units included in WATER9 and all sampling points;
 - iii. All native WATER9 model input files;
 - iv. All laboratory analytical reports for any TACs sampled between December 2020 and the present, including but not limited to discharge monitoring and all data used in the WATER9 analysis (December 2020 – January 2021 and April 2021 sampling events);
 - v. Description of the method used to determine which TACs to include in the December 2020 – January 2021 and April 2021 sampling events;
 - vi. Analytical data or other justification for model parameters used, including but not limited to:
 - 1. biomass concentrations;
 - 2. clarifier percent removal;
 - 3. pH;
 - 4. total solids concentrations;
 - 5. temperature; and,
 - 6. aeration parameters;
 - vii. Results from any additional modeling scenarios performed including worst case daily and worst-case annual scenarios; and
 - viii. Calculations or narrative demonstrating how the average concentration results shown in Tables 1 and 2 of the April 20, 2022, NCASI memorandum (“Subject: WWTS Emissions Estimates”) were developed from the analytical data.
- c. Provide the following information to support the hydrogen sulfide (CASRN 7783-06-4) emissions estimates:
 - i. The modeling analyses and any other information used to determine how total emissions are divided among TEUs EU129-A – EU129E, as described in Footnote 4 of Tables 1-5 of the Emission Calculation Details Workbook;
 - ii. Raw data from ambient monitoring of hydrogen sulfide (CASRN 7783-06-4) and meteorological data collected on site for use in the emissions analysis; and
 - iii. Detailed analyses and calculations performed to develop the emissions estimates from the ambient monitoring data (presented in Table 1 of the May 23, 2022, memorandum to Maria Zufall of GP from Zach Emerson of NCASI).
- d. Provide additional information on frequency, duration, and activity details for infrequent maintenance, accidental releases, or dredging processes.

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 (503-407-7596, heather.kuoppamaki@deq.oregon.gov), and I look forward to your continued assistance with this process.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Kuoppamaki', with a stylized flourish at the end.

Heather Kuoppamaki, P.E.
Cleaner Air Oregon Project Manager

Cc: Logan Vaughan, Georgia-Pacific
Sarah Hu, Georgia-Pacific
Michael Eisele, DEQ
Zach Loboy, DEQ
Julia DeGagné, DEQ
J.R. Giska, DEQ
File