

**WASHINGTON DEPARTMENT OF ECOLOGY
MAIL STOP 47600
OLYMPIA, WASHINGTON 98504**

IN THE MATTER OF AIR EMISSIONS FROM:

Georgia-Pacific Consumer Operations LLC
401 NE Adams Street
Camas, WA 98607

NOC Order No. DE-1147-AQ04
Modification 1

DESCRIPTION

Georgia-Pacific Consumer Operations LLC in Camas, WA (G-P Camas) is a paper mill located in Camas, Washington. The facility is an existing major source under the Prevention of Significant Deterioration (PSD) program, and currently operates under Air Operating Permit (AOP) 0000256 issued by the Washington State Department of Ecology (Ecology) on June 25, 2014.

G-P Camas shut down operations of the Kraft pulp mill (digester, bleach plant, recovery boiler, and lime kiln) and one paper machine (Paper Machine No. 20), which produced communication paper, in April 2018. One paper machine, Paper Machine No. 11, and associated converting operations continues to operate to produce tissue and towel products from purchased pulp. This operation is powered by No. 3 Power Boiler, No. 5 Power Boiler, or a configuration of one or more package boilers in the future.

Prior to the April 2018 shut down, No. 5 Power Boiler burned natural gas as well as Kraft non-condensable gases (NCGs) and steam stripper off-gases (SOGs). The boiler could also burn fuel oil no. 6, concurrently with natural gas, NCGs, and SOGs. Ecology approved the boiler operations under the Notice of Construction (NOC) Approval Order No. DE-1147, issued on June 30, 2004. With the shutdown of the pulping processes, G-P Camas no longer generates SOGs and NCGs. Additionally, the ability to burn fuel oil has been removed. Consequently, No. 5 Power Boiler has been combusting only natural gas.

G-P Camas submitted an NOC application dated March 19, 2019 requesting modification of NOC Approval Order No. DE-1147-AQ04. The application also constitutes a request for modifying G-P's AOP to incorporate the proposed revisions to the Order. Ecology received the NOC application on March 26, 2019 and determined that the application was complete on April 19, 2019. G-P submitted additional information on July 17, 2019 regarding the T-BACT analysis for metals.

FINDINGS

Pursuant to New Source Review (NSR) regulations in the Washington Administrative Code (WAC) 173-400-110, WAC 173-400-111, and 173-460-040 and based upon the complete NOC application submitted by G-P and the technical analysis performed by Ecology, Ecology now finds the following:

1. The location of the G-P Camas mill, in Clark County, is designated as in attainment or unclassified for all criteria pollutants.
2. The NOC application for the original NOC Order was submitted on September 19, 2003. NOC Order DE-1147-AQ04, as issued in 2004, covered the two related projects as described below:
 - a. The first project involved the conversion of the Magnefite Recovery Boiler to a power boiler, which became No. 5 Power Boiler. The boiler became the primary combustion device for the mill and a control device for NCGs and SOGs, with the following controls: low-NOx burners, over-fire air system, flue gas recirculation (FGR) system, NCG preconditioning scrubber, venturi scrubber, and packed bed scrubber.
 - b. The second project, the high volume low concentration/total reduced sulfur (HVLC/TRS) project, addressed the collection, conditioning, and incineration of HVLC "named sources", as required under 40 CFR Part 63 Subpart S, and higher impact (TRS) sources from the pulping process.
 - c. The No. 3 Kraft Recovery Furnace secondary air system was also upgraded as part of the HVLC/TRS project to ensure complete combustion of the methanol and TRS compounds and significantly reduce CO emissions.
3. G-P Camas followed the project construction schedules as outlined in Attachment B of this Order. If the facility had failed to follow the said schedules, the project may be subject to PSD review. The PSD review would include the affected pollutants that were the basis of contemporaneous netting under the major new source review process required by WAC 173-400-113.
4. In accordance with WAC 173-400-111(8), an owner or operator may request a change in the conditions of an approval order. Ecology must review that request and determine that it is in compliance with WAC 173-400-111(8)(a)(i) through (v). The request to modify the NOC Order is to remove limits and monitoring for No. 5 Power Boiler associated with burning NCGs and SOGs, which will no longer occur. The requirements to be removed include: the SO₂ limit and monitoring, the TRS limit and monitoring, the venturi scrubber operating limits, and the packed-bed scrubber operating limits.
5. The 2003 NOC application considered heat input at No. 5 Boiler for the following fuel combinations: (a) 100% natural gas at the maximum firing rate of 318 MMBtu/hr; and (b) 45% natural gas/55% oil mixture in combination with NCGs and SOGs.

For this modification, the combustion of natural gas and firing rate are unchanged from scenario (a). The No. 5 Boiler will no longer combust fuel oil, NCGs, and SOGs.

6. For the 2003 projects, Ecology considered: 1) the contemporaneous changes; 2) the combined emission impacts of conversion of the Magnetite Recovery Boiler to the No. 5 Power Boiler and HVLC/TRS Project; and 3) the use of emission reduction credits.

The resulting emission increases showed that the project triggered minor NRS review (see Attachment A). Emissions increases were less than the significant emission rate (SER) level defined in 40 CFR 52.21, Emission Changes and Netting Analysis. Hence, Ecology did not require PSD review for the project provided that the mill followed the construction schedule to meet the contemporaneous time criteria as required in 40 CFR 52.21(b)(3). The construction schedule (project milestones) is provided in Attachment B.

7. On December 15, 2004, the G-P Camas mill surrendered the portion of its Emissions Reductions Credits needed to offset carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO₂) emission increases from the projects described in Finding #3.
8. New or modified sources of toxic air pollutants (TAPs) are subject to the requirements of WAC 173-460-070 which require that the increase in emissions associated with modification are sufficiently low to protect human health and safety. As with the NSR requirements, new source review of a modified source of TAPs is limited to the emission unit or units proposed to be modified and the TAPs whose emissions would increase as a result of the project. Per WAC 173-460-080, compliance may be assessed using de minimis emission values, acceptable source impact levels (ASILs) using dispersion modeling or small quantity emission rates (SQERs). Emission increases from the 2003 project were above de minimis values for some volatile organic compounds (VOCs) and metal compounds, as shown in Attachment C. The increases did not result in modeled impacts in excess of the ASILs for any TAPs listed under WAC 173-460-150. The NOC modification request resulted in lower emissions that are below the current SQERs ; therefore, an update of the previous modeling is not required.
9. Best available control technology (BACT) and toxic best available control technology (T-BACT) are required under WAC 173-400-113 and WAC 17-460-060, respectively. For No. 5 Boiler, these are summarized below:
 - a. BACT for emissions of CO remains the same as the previous BACT determination, which is good boiler design and operation, reflecting good combustion practices.
 - b. BACT for emissions of SO₂ has been determined to be the combustion of low-sulfur natural gas for this modification. Since the boiler will only burn natural gas in the future, SO₂ limits and monitoring are no longer considered necessary and the previous limits and monitoring requirements have been removed. The facility will be required to maintain records of the type of fuel burned in No. 5 Power Boiler.
 - c. T-BACT for VOCs remains the same as the previous BACT determination, which is considered to be proper design and operation of the boiler to ensure efficient combustion.

- d. The original T-BACT determination for metals (as particulate) is being revised with this modified Order. Based on the 2004 application, estimated emissions using poorly rated AP-42 emission factors, for the combustion of natural gas resulted in calculated emission rates above the de minimis rate for certain metals (see Attachment C). Based on the information provided to Ecology at that time, T-BACT was determined to be the use of a venturi scrubber. G-P submitted an updated T-BACT analysis in July 2019. Based on the analysis provided, Ecology concurs that operation of a venturi scrubber for a natural gas boiler is not T-BACT for metals particulate. Based on engineering principles, the particulate removal efficiency of a venturi scrubber drops significantly if the particulate loading is too low and out-of-range. The typical design load for a venturi scrubber is 0.01 to 50 gr/scf (EPA-452/F-03-017); this is significantly greater than the estimated 0.004 gr/dscf (0.005 lb/MMBtu) loading at No. 5 Boiler. In reviewing test results associated with the venturi scrubber, Ecology noted that the removal efficiency was close to 0% for 5 of the 9 recent particulate source tests. Therefore, a venturi scrubber is not considered T-BACT for particulate metals associated with natural gas. Good design and practices, including period tune-up is considered T-BACT. Therefore, this modification removes the requirements associated with the venturi scrubber.
 - e. A T-BACT determination for acid gases was made in the original Order and was determined to be the use of a packed-bed scrubber with caustic as the scrubbing media. Acid gases for the previous project consisted of SO₂ that was generated from the combustion of NCGs and SOGs, and fluorides and chlorides from the combustion of fuel oil. Because No. 5 Boiler no longer burns NCGs, SOGs, or fuel oil, the sources of acid gas have been eliminated. The boiler will only combust natural gas. As such, T-BACT is no longer required for emissions of acid gases. Therefore, this modification removes the requirements associated with the packed-bed scrubber.
10. This modification also removes the TRS and SO₂ limits at No. 5 Power Boiler. These limits were based on emissions from the combustion of NCGs and SOGs. As of May 2018, NCGs and SOGs are no longer being generated at the facility or burned at No. 5 Power Boiler. The pulping process that generated these gases were permanently shut down.
 11. This modification reduces PM₁₀ monitoring frequency at No. 5 Power Boiler from quarterly to annually. This reduction is based on the most recent PM₁₀ source tests during the last two years, from May 2017 through May 2019. When NCGs and SOGs were combusted with natural gas, PM₁₀ averaged about 53% of the limit. When the boiler burn only natural gas, PM₁₀ emissions was significantly reduced and averaged about 13% of the limit.
 12. This modification removes the minimum steam limit of 65,000 lbs/hr at No. 5 Power Boiler. The steam limit was a gap-filling requirement to ensure there was sufficient load for complete combustion of the NCGs and SOGs. Because the boiler no longer burns NCGs and SOGs, the steam limit is no longer applicable.

13. The opacity limit for Kraft mills is no longer applicable to No. 5 Power Boiler, as the facility is no longer a pulp mill. This modification removes the opacity limit specified in WAC 173-405(6) and replaces it with the opacity limit specified as a general standard for maximum emissions in WAC 173-400-040(2).
14. No. 4 Power Boiler has been permanently shut down. This modification removes the annual fuel limits of 527,486 MMBtu (total heat input) and 131,871 MMBtu (no. 6 fuel oil heat input) for this boiler. Ecology also removed the requirements to track and report the boiler's fuel usage on the monthly basis.
15. No. 3 and No. 4 Kraft Recovery Furnaces have been permanently shut down. This modification removes the carbon monoxide (CO) bubble limit of 2,504 tons per year for the combined emissions from these two units. The calculation procedures for CO emissions associated with this limit were also removed.
16. This modification removes the requirement for the written plan for handling NCGs and SOGs and a written community notification plan to implement in the event of an unplanned releases of these gases during the project construction phase.
17. The initial performance tests have been completed and submitted to the Department of Ecology. This modification removes the requirement for initial performance testing.
18. The project and modification will not impact visibility in any Class I areas.
19. The project and modification will not cause a violation of any ambient air quality standards.
20. The processing of this modification relied on the 2003 SEPA checklist and May 25, 2004 Determination of Non-Significance (DNS) associate with the issuance of Order No. DE-1147-AQ04. Ecology has determined that the modifications to this Order remain within the scope of the original evaluation and that an additional determination is not necessary.
21. There are no construction activities associated with this modification. Therefore, this modification shall not become invalid if construction is not commenced within eighteen months (18) after the receipt of this approval.
22. The Permitting Authority is defined in WAC 173-400-030(66) as Ecology or the local air pollution control authority, whichever has the jurisdiction over the G-P Camas mill.

THEREFORE, it is ordered that the project, as described in said NOC permit applications and other information submitted to the Ecology in reference thereto, is approved subject to the conditions listed below.

CONDITIONS

Approval Conditions

- 1. Emissions Limits and Related Monitoring and Reporting Requirements for the No. 5 Power Boiler:** Upon the completion of construction and start-up of No. 5 Power Boiler with associated controls and equipment modifications, the following emissions limitations, monitoring, and reporting requirements listed in Table 1 will apply for No. 5 Power Boiler.

Condition	Parameter	Limit & Averaging Period (shall not exceed)	Monitoring & Reporting ¹
1.1	PM ₁₀	0.0164 gr/dscf (0.0373 g/dscm) @ 8% O ₂ , hourly average (average of 3 one-hour runs)	Sample annually consisting of three one-hour tests using EPA Method 5. Report test results to the Permitting Authority within 60 days of the performance. The Permittee may submit a written request to the Permitting Authority to modify the source test to measure PM ₁₀ filterable. Upon written approval by the Permitting Authority, PM ₁₀ filterable may be use to demonstrate compliance with this limit.
1.2	PM ₁₀	36.7 tpy, annual total	Annual total value is calculated using actual emissions from <i>the most recent</i> representative stack test results. Permittee shall submit a monthly report of progress toward the annual limit.
1.3	Opacity	Average 20% opacity for more than 3 consecutive minutes in any 60-minute period	Ecology Method 9A, or other approved method, is the reference test method.
1.4	SO ₂	Shall be fueled by natural gas	Maintain records of the type of fuel burned in No. 5 Power Boiler.
1.5	NO _x	99.2 lb/hr (44.99 kg/hr)	EPA Method 7, 7B, or 7E is the reference method. Monitor continuously using an approved CEM that conforms to 40 CFR Part 60

Condition	Parameter	Limit & Averaging Period (shall not exceed)	Monitoring & Reporting ¹
		on a 24-hour average	(December 13, 1990), App. B and F, Perf. Spec. 2. Flue gas recirculation (FGR) shall be continuously operated and maintained when firing natural gas.
1.6	NO _x	434.5 tpy, annual total	Annual total value is calculated using actual emissions from the CEM. Permittee shall submit a monthly report of progress toward the annual limit.
1.7	CO	0.19 lb/MMBtu heat input, 30-day rolling average	EPA Method 10 is the reference method. Annual total value is calculated using actual emissions from <i>the most recent</i> representative stack test results. Report monthly.
1.8	CO	264.6 tpy, annual total	Annual total value is calculated using actual emissions from <i>the most recent</i> representative stack test results. Permittee shall submit a monthly report of progress toward the annual limit.
1.9	VOC	8.8 tpy, annual total	EPA Method 25A or 25B is the reference method. Annual total value is calculated using actual emissions from <i>the most recent</i> representative stack test results. Permittee shall submit a monthly report of progress toward the annual limit.

¹Monitoring is required for the monitoring period when the unit is in operation.

2. Source tests shall be required at the No. 5 Power Boiler to verify the validity of the premises that the PSD review is not required for the affected pollutants. If the results of the source tests and other relevant information available to Ecology indicate any pollutants that increase by an amount greater than the "significant net increase" as defined in WAC 173-400-112, PSD review may be required for the affected pollutants.
3. **Reporting:** Each occurrence of monitoring emission or alternative parameters, where applicable, in excess of the limits set above shall be reported at least monthly within fifteen (15) days of the end of each calendar month.

This reporting requirement includes the parameters listed below, in a format approved in advance by Ecology, which may not necessarily be limited to the following:

- A) The time of occurrence.
 - B) Magnitude of the emission or process parameters excess.
 - C) The duration of the excess.
 - D) The probable cause.
 - E) Any corrective actions taken or planned.
 - F) Any other agency contacted.
4. **O&M Manuals:** Operation and maintenance manuals for all equipment modified by the project that has the potential to affect emissions to the atmosphere shall be updated and followed. Copies of the manuals shall be available to Ecology. Excess emissions that result from a failure to follow the requirements of the manuals may be considered proof that the equipment was not properly operated and maintained.
 5. **Enforcement:** Any activity which is undertaken at the G-P Camas Mill, in a manner which is inconsistent with the application and this Order, shall be subject to enforcement under applicable regulations.
 6. Access to the facility by the U.S. Environmental Protection Agency (EPA), the Department of Ecology, or local regulatory personnel shall be permitted upon request and presentation of proper credentials for the purpose of compliance assurance inspection. Failure to allow access is grounds for revocation of this determination of approval.
 7. The Permitting Authority may modify conditions contained herein, pursuant to legal requirements, based on air quality, emissions monitoring results, or upon the request of the Permittee.

Nothing in this order shall be construed as obviating compliance with any requirement of law other than those imposed pursuant to the Washington Clean Air Act and rules and regulations thereunder.

Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial to enforce the terms of this Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

MORE INFORMATION

- **Pollution Control Hearings Board**
http://www.eho.wa.gov/Boards_PCHB.aspx
- **Chapter 43.21B RCW, Environmental Hearings Office – Pollution Control Hearings Board**
<http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B>
- **Chapter 371-08 WAC – Practice and Procedure**
<http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08>
- **Chapter 34.05 RCW – Administrative Procedure Act**
<http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05>
- **Chapter 70.94 RCW, Washington Clean Air Act**
<http://apps.leg.wa.gov/RCW/default.aspx?cite=70.94>
- **Air Quality Rules**
www.ecy.wa.gov/laws-rules/ecywac.html#air

SIGNATURES

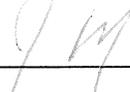
Reviewed by:



Ha Tran, P. E.
Environmental Engineer
Washington State Department of Ecology

Date 1/29/2020

Signature Authority:



James DeMay, P.E.
Industrial Section Manager
Washington State Department of Ecology

Date 1/29/2020

ATTACHMENT B

Project Milestone to Meet Contemporaneous Changes per 40 CFR 52.21(b)(3)

Projects	Description of Project and Completion Date or Projected Completion and Operational Data
Future Potential No. 5 Power Boiler	Complete Construction prior to or by September 10, 2004. Complete shakedown and becomes operational prior to or by December 1, 2004. Complete Initial Performance Test prior to or by January 31, 2005.
Past Actual Magnefite Recovery Furnace	Shutdown of Magnefite Recovery Furnace prior to or by August 2, 2004.
HVLC TRS Project	Shutdown of No. 3 Kraft Recovery Furnace prior to or by September 19, 2004 and modify secondary air system prior to or by September 30, 2004. Complete shakedown No. 3 Kraft Recovery furnace and modified secondary air system becomes operational prior to or by November 15, 2004.
No. 4 Power Boiler Limitation on Annual Heat Input	Place Fuel Limitation in Regulatory Order, effective on November 15, 2004.
Cluster Rule Implementation Foul Condensate Steam Stripping System and Fiber Line Changes	Complete – April 2000.
Effluent Pump Station Back-up Power	Complete – April 2000.
Magnefite Pulping Shutdown	Complete – Shutdown in October 2001.
Paper Machines Shutdown	Complete – Shutdown in October 2001.
K3/K4 Pulping Consolidation	Complete – September 2002.

ATTACHMENT C

**ESTIMATED TAP EMISSION RATES ASSOCIATED WITH NATURAL GAS
 COMBUSTION USING AP-42 EMISSION FACTORS**

Pollutants	Averaging period	De Minimis (lb/avg period)	Emission rate (lb/avg period)
1,4-Dichlorobenzene	Year	0.872	1.077*
Formaldehyde	Year	1.6	69.4
Napthalene	Year	0.282	0.562
Arsenic compounds	Year	0.00291	0.185
Cadmium compounds	Year	0.00228	0.99864
Chromium(VI)	Year	0.000064	1.3**
Manganese compounds	24-hr	0.000263	0.000972
Mercury	24-hr	0.000591	0.0006552
Vanadium	24-hr	0.00131	0.00576

*Estimate for all dichlorobenzene.

** Estimate for total chromium.