NOTICE OF CONSTRUCTION APPLICATION

GEORGIA-PACIFIC CORRUGATED LLC

OLYMPIA, WA

JULY 2023

Submitted by:

Georgia-Pacific Corrugated

Georgia-Pacific Corrugated LLC
Olympia Container
1203 Fones Rd SE
Olympia, WA 98501

Submitted to:

Olympic Region Clean Air Agency
ORCAA

Olympic Region Clean Air Agency
2940-B Limited Lane NW
Olympia, WA 98502

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1. INTRODUCTION

Georgia-Pacific Corrugated LLC (GP) owns and operates the Olympia corrugated container manufacturing facility (Olympia Container or Facility) in Olympia, Thurston County, Washington. Olympia Container is an existing minor stationary source of air emissions and operates as Source No. 17 according to the Olympic Region Clean Air Agency (ORCAA).

Olympia Container currently operates a natural gas-fired boiler (Existing Boiler) with a heat input capacity of 16 million British thermal units per hour (MMBtu/hr). GP proposes to install a new, natural gas-fired, 500 HP boiler (New Boiler) to replace the Existing Boiler's current steam supply.[1] Once the New Boiler is installed and commissioned, the Existing Boiler will be permanently shutdown (Project).

According to ORCAA, Chapter 6, Rule 6.1, a Notice of Construction (NOC) Application must be submitted if a facility plans to construct, install, establish, and/or modify a stationary source. GP is submitting a complete NOC Application for the Project.

1.1 APPLICATION ORGANIZATION

This Application is organized in a report format and includes the following sections and appendices:

- **Section 1 – Introduction:** provides general information regarding the Facility and an overview of the application.
- **Section 2 – Facility and Project Description:** provides details about Facility and the proposed project description.
- **Section 3 – Emissions Calculations:** discusses the Project emissions inventory.
- **Section 4 – Regulatory Analysis:** summarizes applicability and non-applicability of Federal, Washington Department of Ecology, and ORCAA regulations potentially applicable to the Project.

[1] The proposed New Boiler will have a capacity of 500 HP and a fuel consumption of 20,412 cubic feet per hour.

- **Section 5 – Best Available Control Technology (BACT) Review:** summarizes the BACT evaluations conducted to determine technically and economically feasible air pollution control techniques or operating practices.

- **Appendix A – Manufacturer Specifications:** contains the proposed boiler manufacturer specifications.

- **Appendix B – Emissions Inventory and TAP (Toxic Air Pollutant) Evaluation:** contains supporting information for emissions calculations and TAP Evaluation.

- **Appendix C –Electronic Modeling Files:** provides a summary of the comparison of project emissions increases to the small quantity emission rates for relevant pollutants and electronic modeling files.

- **Appendix D – SEPA Checklist:** contains the required SEPA checklist.

- **Appendix E – ORCAA Forms:** contains the required ORCAA forms for NOC Applications.

- **Appendix F – BACT Supporting Information:** contains supporting information for the BACT analysis.

2. FACILITY AND PROJECT DESCRIPTION

Olympia Container is located at 1203 Fones Rd SE, Olympia, Thornton County, Washington. Figure 2-1 shows the facility location. A detailed site map is included in Section 6, Figure 6-2, of this application. Thurston County, Washington is classified as in attainment or unclassifiable for all criteria pollutants.[2] Olympia Container manufactures corrugated containers and is categorized under the Standard Industrial Classification (SIC) code 2653 and North American Industry Classification System (NAICS) code 322211 for corrugated and solid fiber box manufacturing.

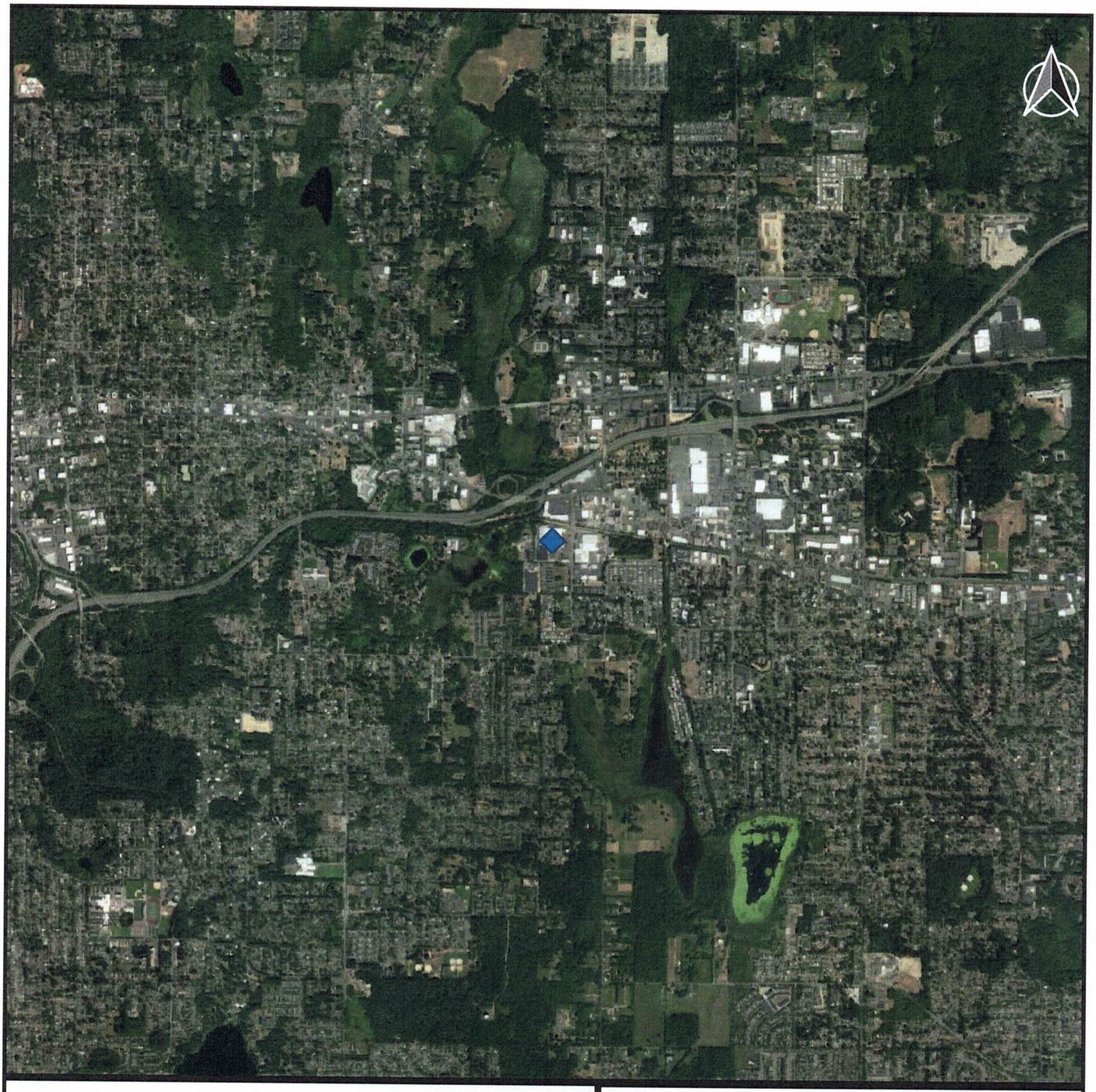
2.1 FACILITY DESCRIPTION

Olympia Container utilizes rolls of liner and medium paperboard to manufacture custom corrugated packaging. The medium is corrugated for strength and then glued onto the liner paper to form corrugated sheets. These corrugated sheets are subsequently processed through a combination of flexographic printing, cutting, slitting/scoring, trimming, folding, and gluing operations (collectively referred to as "finishing operations") to form the final corrugated containers that are then sold to customers. The Facility has the capability to operate 24 hours per day, seven days per week, and 52 weeks per year. One 16 MMBtu/hr, natural gas-fired Existing Boiler generates steam for process heat.

2.2 PROJECT DESCRIPTION

With this Project, GP proposes to replace the Existing Boiler with a slightly larger 500 natural gas-fired, steam boiler. Due to the age of the boiler, a "like-for-like" replacement is not available. The New Boiler will operate in a new building constructed on the Facility's property. Once the New Boiler is installed and operating, the Existing Boiler will be permanently shut down and removed from the Facility. No other modifications will be made as part of the Project.

[2] 40 CFR §81.348.



Legend

Facility Location

0 1 2 3 km

Figure 2-1
Facility Location

Georgia-Pacific Corrugated LLC
Olympia Container
Olympia, Washington

PREPARED BY: R.C.	CHECKED BY: J.B.
DATE CREATED: March 2023	PROJECT NO.: 01720-0001

ALL4

Aerial Imagery Courtesy of Google Satellite

3. PROJECT EMISSIONS INVENTORY

This following section summarizes the approach for quantifying emissions from the proposed project.

3.1 NEW BOILER POTENTIAL EMISSIONS

The PTE from the New Boiler is calculated based on the design capacity of the New Boiler (20.94 MMBtu/hr) and continuous operation (8,760 hours per year). The New Boiler emissions factors for carbon monoxide (CO) and nitrogen oxides (NO_X) are based on vendor guarantees and proposed BACT limits. Manufacturer specifications are included in Appendix A. Greenhouse gas (GHG) emissions factors and global warming potentials are from the EPA's Mandatory Reporting Rule for Greenhouse Gases, 40 CFR Part 98, Subpart A and Subpart C, Tables A-1, C-1, and C-2. All remaining criteria, hazardous, and toxic air pollutant emissions factors are from the United States Environmental Protection Agency's (U.S. EPA) AP-42, Section 1.4. Chromium is speciated into Chromium (III) and Chromium (VI). Chromium (III) is 96% of total Chromium and Chromium (VI) is 4% of total Chromium.[3]

3.2 FACILITY-WIDE POTENTIAL EMISSIONS

Table 3-1 summarizes Facility-wide potential emissions accounting for the maximum operating capacity of the New Boiler and the shutdown of the Existing Boiler. The PTE calculations following the Project confirm that Olympia Container will remain a minor source of all new source review pollutants relative to the 100 tpy major source threshold for Title V and 250 tpy major source threshold for Prevention of Significant Deterioration (PSD). The Facility will also remain an area source for hazardous air pollutants (HAP), as it will stay below the applicable major source thresholds of 25 tpy for total HAPs and 10 tpy for any single HAP, respectively. Potential emissions for downstream emissions units that utilize the steam from the New Boiler are currently

[3] "EIS and the Making of the NEI." August 14, 2017, https://www.epa.gov/sites/default/files/2017-10/documents/master_module_2017eic_eis_nei_training_module1_final.pdf

permitted based on design capacity and there will be no change in PTE from any other emissions units as a result of the Project. Detailed calculations are provided in Appendix B.

Table 3-1
Summary of Facility-Wide Potential Emissions Calculations

Pollutant	Tons per Year
PM (Filterable Particulate Matter)	78.11
PM_{10} (Total Particulate Matter <10 microns)	57.13
$PM_{2.5}$ (Total Particulate Matter <10 microns)	11.84
CO	2.02
VOC (Volatile Organic Compounds)	29.79
SO_2 (Sulfur Dioxide)	0.056
NO_X	1.72
Lead	4.7E-05
Total HAP	14.84
Methanol (Highest Individual HAP)	5.84
Total GHG	11,193
Total CO_2e (Carbon Dioxide Equivalents)	11,205

3.3 TOXIC AIR POLLUTANT EMISSIONS

The Project emissions increase is quantified to evaluate toxic air pollutants as required by Washington Administrative Code (WAC) 173-460. The project emissions increase is the PTE of the New Boiler minus the past actual emissions from the Existing Boiler. As previously stated, the Existing Boiler will be permanently shut down following the start-up of the New Boiler. Actual emissions are defined in ORCAA Regulations Rule 1.4 Definitions:

> *"Actual Emissions" means the actual rate of emissions of a pollutant from an emission unit, as determined in accordance with (a) through (c) of this rule.*
>
> *(a) In general, actual emissions as of a particular date must equal the average rate, in tons per year, at which the emission unit actually emitted the pollutant during a two-year period which precedes the particular date, and which is representative of normal source operation. The Agency must allow the use of a different time period upon determination that it is more representative of normal source rates, and types of materials processed,*

stored, or combusted during the selected time operation. Actual emissions must be calculated using the emissions unit's actual operating hours, production period.

(b) The Agency may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the emissions unit.

(c) For an emissions unit that has not begun normal operations on the particular date, actual emissions will equal the potential to emit of the emissions unit on that date.

The Existing Boiler past actual emissions are based on the average of the previous, complete two-year period (2021-2022) natural gas fuel consumption. The Existing Boiler air toxic pollutant emissions rates are based on emissions factors from AP-42, Section 1.4. As with the New Boiler, chromium is speciated into Chromium III and Chromium VI.

4. REGULATORY ANALYSIS

As part of the air permitting process, GP has prepared an assessment of Federal, Washington Department of Ecology, and ORCAA air regulatory programs that are applicable or potentially applicable to the Facility.

4.1 FEDERAL REGULATIONS

The following subsections discuss the potentially applicable Federal air quality standards.

4.1.1 New Source Review – 40 CFR Part 51

The NSR program includes both the Nonattainment NSR (NNSR) regulations and PSD regulations. Thurston County, Washington is classified as in attainment or unclassifiable for all criteria pollutants[4], therefore, the PSD permitting program is potentially applicable to the Facility. As discussed in Section 3.2, facility-wide potential emissions of regulated NSR pollutants demonstrate that Olympia Container will not become a major stationary source under the PSD regulations. Therefore, PSD and NNSR permitting regulations do not apply to the Project.

4.1.2 Standards of Performance for New Stationary Sources at 40 CFR Part 60

The U.S. Environmental Protection Agency (U.S. EPA) has promulgated standards of performance for new, modified, or reconstructed sources of air pollution at 40 CFR Part 60, also known as the NSPS. The New Boiler is the only new or modified source of emissions associated with the Project.

4.1.2.1 40 CFR Part 60, Subpart A – General Provisions

All affected sources are subject to the general provisions of 40 CFR Part 60, Subpart A unless excluded by the source-specific NSPS. 40 CFR Part 60, Subpart A requires initial notification and performance testing, identifies recordkeeping and monitoring requirements, provides reference methods, and mandates general control device requirements for all other subparts as applicable.

[4] 40 CFR §81.348.

The New Boiler will be subject to 40 CFR Part 60, Subpart A and will submit the required initial notification of construction and start-up notification as outlined in 40 CFR §60.7.

4.1.2.2 40 CFR Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR Part 60, Subpart Dc (Subpart Dc) establishes sulfur dioxide (SO_2) and particulate matter (PM) emissions standards and compliance and performance testing, monitoring, recordkeeping, and reporting requirements for steam generating units constructed after June 9, 1989 that have a maximum design heat input capacity between 10 and 100 MMBtu/hr. The New Boiler will be constructed after June 9, 1989 and has a maximum design heat input capacity of 20.94 MMBtu/hr; therefore, Subpart Dc applies to the New Boiler.

The emissions standards for SO_2 and PM apply only to steam generating units firing coal, oil, wood, or fuel mixes. The New Boiler will only fire natural gas and therefore is not subject to any emissions standards in 40 CFR §60.42c or 40 CFR §60.43c.

The New Boiler will be subject to the reporting and recordkeeping requirements in 40 CFR §60.48c. The rule allows flexibility in recordkeeping requirements in 40 CFR §60.48c(g)(1)-(3). Upon startup of the New Boiler, Olympia Container intends to comply with the recordkeeping requirements in 40 CFR §60.48c(g)(3).

4.1.3 National Emission Standards for Hazardous Air Pollutants at 40 CFR Part 61 and 63

National Emission Standards for Hazardous Air Pollutants (NESHAP), federal regulations found in 40 CFR Part 61 and 63, are emissions standards for HAP that apply to major sources of HAP (facilities that exceed the major source thresholds of 10 tpy of a single HAP and/or 25 tpy of any combination of HAP) or specifically designated non-major or area sources. Olympia Container is considered an area source because its potential emissions of individual and total HAPs are less than the applicable major source thresholds. With the exception of the NESHAP addressed below, all other NESHAP are categorically not applicable to the Project.

4.1.3.1 40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Source

40 CFR Part 63, Subpart JJJJJJ (Subpart JJJJJJ) establishes NESHAPs for industrial, commercial, and institutional boilers located at area sources of HAP. As discussed in Section 3.2, Olympia Container is an area source for HAP.

40 CFR §63.11237 defines gas-fired boilers as *any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.* Per 40 CFR §63.11195(e), gas-fired boilers are not subject to Subpart JJJJJJ. The New Boiler meets the definition of gas-fired boiler under 40 CFR §63.11237 and is therefore exempt from Subpart JJJJJJ.

4.2 ORCAA REGULATIONS

For the purpose of this NOC Application, potentially applicable ORCAA regulations were reviewed. The following subsections discuss the potentially applicable ORCAA standards:

- Rule 3.1 – Annual Registration Fees
- Rule 3.3 – Notice of Construction Fees
- Rule 4.1 – Registration Required
- Rule 6.1 - Notice of Construction Required
- Rule 8.2 – General Standards for Maximum Visual Emissions
- Rule 8.3 – General Standards for Maximum Particulate Matter
- Rule 8.5 – Odor Control Measures
- Rule 8.6 – Emission of Toxic Air Pollutants
- Rule 8.7 – Reporting of Excess Emissions
- Rule 8.8 – Control Equipment – Maintenance and Repair
- Rule 8.11 – Record Keeping and Reporting

4.2.1 Rule 3.1 – Annual Registration Fees

Rule 3.1 establishes requirements for the payment of annual registration fees. The Facility is currently responsible for the payment of annual registration fees and will continue to comply upon completion of the Project.

4.2.2 Rule 3.3 – Notice of Construction Fees

The Facility will be responsible for payment of Filing and additional Processing Fees. Per the current NOC Fee Schedule, combustion equipment rated between 10 and 30 MMBtu have an equipment fee of $1,279 and a complexity level 2 fee of $2,560, making the total Filing Fee $3,839. Additional Processing Fees include work that exceeds base-fee hours (13) and will be billed by ORCAA at a rate of $98.36 per hour. GP will pay the required filing fee via the online payment portal in order for this NOC application to be deemed complete.

4.2.3 Rule 4.1 – Registration Required

Per Rule 4.1(a), the Facility is required to register the New Boiler with ORCAA. The Facility must comply with the requirements in Rules 4.2 and 4.3, including payment of initial and annual registration fees discussed in Section 4.2.2.

4.2.4 Rule 6.1 – Notice of Construction Required

Rule 6.1 requires that facilities obtain approval of an NOC Application before beginning construction of a stationary source. GP is filing this NOC Application to obtain approval for the construction of the 20.94 MMBtu/hr natural gas-fired boiler.

4.2.4.1 Rule 6.1.2 – Application Processing

Rule 6.1.2 requires the following in order for an NOC Application to be considered complete and receive approval:

- The standard ORCAA NOC form(s) that are applicable to the proposed stationary source or modification;
- A completed SEPA Checklist;

- When applicable, all information required under WAC 173-400-117, WAC 173-400-700 through 750, and WAC 173-400-800 through 860;
- NOC processing fees paid;
- Verification that applicable new source review requirements in Rule 6.1.4 have been met; and
- Applicable public involvement required in Rule 6.1.3.

Applicable ORCAA forms are provided in Appendix E. The completed SEPA Checklist is provided in Appendix D. The Facility will remain a true minor source, not located in a federal Class I area following the proposed Project. Therefore, the requirements of Washington Administrative Code (WAC) 173-400-117, WAC 173-400-700 through 750, and WAC 173-400-800 through 860 are not applicable. Finally, the NOC processing fees, Rule 6.1.3, and Rule 6.1.4 are addressed in Sections 4.2.2, 4.2.4.2, and 4.2.4.3, respectively.

This NOC Application meets the provisions in Rule 6.1.2(b) to be considered complete.

4.2.4.2 Rule 6.1.3 – Public Involvement

Rule 6.1.3 outlines requirements for public notices and comment periods on NOC applications. The Project requires an NOC application; therefore, a public notice will be issued.

4.2.4.3 Rule 6.1.4 – Requirements for Approval

Rule 6.1.4 sets approval requirements for any new stationary sources or modifications, depending on national ambient air quality standards (NAAQS) attainment status. The Facility is located in Thurston County, which is an area of attainment for all pollutants. Therefore, the Facility is subject to the provisions of Rule 6.1.4(a). According to Rule 6.1.4(a)(2), for an NOC Application to receive approval, a proposed new stationary source or modification must employ best available control technology (BACT) for all air pollutants not previously emitted or whose emissions would increase because of the new stationary source or modification. Section 5 of this NOC Application contains the Project BACT analysis.

ORCAA Rule 6.1.4(a)(3) requires a demonstration that the proposed new stationary source, located in a nonattainment area, will not cause or contribute to a violation of any ambient air quality standard. While this subsection does not address the projected impacts within attainment areas, ORCAA also requires that new stationary sources or modifications in attainment areas submit an ambient air quality demonstration. ORCAA considers the requirement met if (for each pollutant with an ambient air quality standard) the PTE of the pollutant for the new stationary source is below the significant emissions level listed in the table below. [5] The following table compares the New Boiler's potential criteria pollutant emissions to ORCAA's criteria pollutant significance thresholds. The PTE from the New Boiler are less than the significant emissions levels. Therefore, New Boiler will not cause or contribute to a violation of an ambient air quality standard.

Table 4-1
ORCAA's Significant Emissions Levels[6]

Pollutant	New Boiler PTE (tons per year)	Significance Thresholds Criteria Pollutants (tons per year)
PM (Total Particulate)	0.68	2.5
PM_{10}	0.68	1.5
PM_{25}	0.68	1.5
SO_2	0.054	4.0
NO_X	1.34	4.0
CO	1.70	10.0
Lead	0.089 pounds/year	120 pounds/year

Per ORCAA Rule 6.1.4(a)(5), a new stationary source, which will emit toxic air pollutants regulated under chapter 173-460 WAC, is subject to the review requirements under WAC 173-460. The review requirements are limited to the TAPs for which emissions would increase as a result of the Project. These requirements include a BACT technology review for toxics (tBACT) for each new and modified emissions units and an air quality demonstration. GP reviewed available resources to determine that there are no precedents for installing and operating air pollution control devices on small gas-fired boilers to control VOC and organic HAP emissions. GP reviewed the

[5] Correspondence with Jennifer DeMay (ORCAA), March 22, 2022.
[6] ORCAA's 2009 Dispersion Modeling Guidance and correspondence with Jennifer DeMay (ORCAA), March 22, 2022.

U.S. EPA Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) and found that the achieved in practice method is good combustion practices. The toxics air quality demonstration is discussed further in Section 4.2.8 of this application.

4.2.4.4 Rule 6.1.5 – Notice of Completion

Rule 6.1.5 established requirements for notifying ORCAA upon completion of construction. In accordance with Rule 6.1.5(a), the Facility will notify ORCAA upon completion of construction and the New Boiler start of operations.

4.2.5 Rule 8.2 – General Standards for Maximum Visual Emissions

Rule 8.2 establishes visual emissions standards for all facilities, sources, and emissions units regulated by ORCAA when a more stringent visible emissions standard does not apply. A more stringent visible emissions standard will not apply to the New Boiler. Therefore, the Facility will not allow any contaminated gas stream emitted from the New Boiler to the outdoor atmosphere to exceed 20% opacity for more than three minutes in any one hour. The Facility will comply with this requirement by burning natural gas fuel only.

4.2.6 Rule 8.3 – General Standards for Maximum Particulate Matter

Rule 8.3 establishes PM standards for all sources and emissions units regulated by ORCAA when a more stringent PM standard does not apply. In accordance with Rule 8.3(a), the Facility will not allow emissions of PM from the New Boiler to the outdoor atmosphere to exceed 0.10 grains per standard cubic foot (gr/scf) of gas (at 7% oxygen). The Facility will also take reasonable precautions to prevent fugitive PM from becoming airborne. The Facility will comply with this requirement by burning natural gas fuel only.

4.2.7 Rule 8.5 – Odor Control Measures

As established in Rule 8.5(a), facilities must install and operate reasonably available control technology (RACT) to mitigate the generation of odor from emissions units. The New Boiler will not emit any odor-bearing gases.

4.2.8 Rule 8.6 – Emission of Toxic Air Pollutants

Per Rule 8.6(a), all sources installed after June 18, 1991, must meet the requirements of WAC 173-460, New Sources of Toxic Air Pollutants. Rule 8.6(a) applies to the New Boiler. Additionally, the Facility must not allow the emissions of formaldehyde beyond the property line to exceed 0.05 parts per million (ppm) or 61 micrograms per cubic meter ($\mu g/m^3$) one hour average [Rule 8.6(b)].

Project TAP emissions were first compared to the *de minimis* emissions levels in WAC 173-460-150. For any TAP which exceeds the *de minimis* threshold, an acceptable source impact level analysis (ASIL) must be performed. A demonstration that impacts will be less than the relevant ASILs can be performed either by an air dispersion modeling assessment or a comparison to the SQER. Project TAP emissions which exceed the *de minimis* emissions value were then compared to the SQER. The following toxics are expected to exceed the *de minimis* value, but the emissions increase is expected to be less than the SQER. Therefore, further analysis is not required.

- Formaldehyde – Annual Average
- Arsenic – Annual Average
- Nickel - Annual Average

Furthermore, facility wide emissions of formaldehyde were modeled using AERSCREEN in the most recent NOC application submitted to the ORCAA for the permit issued in 2020. The analysis demonstrated that predicted 1-hour average concentrations of formaldehyde at the property line were less than 2 $\mu g/m^3$. Emissions were conservatively modeled using volume source parameters. As such, no credit was taken for the momentum and buoyancy of the natural-gas boiler exhaust. Due to the conservative nature of the previous modeling and the nominal hourly increase of formaldehyde from the replacement of the existing boiler slightly larger boiler (0.00046 lb/hr, on a PTE-to-PTE basis), the Facility will continue to comply with the short-term formaldehyde standard.

Project TAP emissions may exceed the respective SQER emission values for the following TAPs:

- Cadmium

- Chromium (VI)

As such, GP prepared a refined air dispersion modeling analysis to evaluate the Facility's compliance with the Cadmium and Chromium VI ASIL. The refined air dispersion modeling assessment is included in Section 6.

4.2.9 Rule 8.8 – Control Equipment – Maintenance and Repair

Rule 8.8 requires that process and air pollution control equipment be kept in good operating condition and repair. The Facility will maintain the New Boiler by following the manufacturer recommendations.

4.2.10 Rule 8.11 – Record Keeping and Reporting

Rule 8.11 establishes requirements for owners and operators of stationary sources to maintain records. The Facility will maintain records of the New Boiler natural gas consumption to quantify emissions annually. These records will be made available to ORCAA upon request.

4.3 WASHINGTON DEPARTMENT OF ECOLOGY REGULATIONS

For the purpose of this NOC Application, potentially applicable Washington Department of Ecology regulations were reviewed. The following subsections discuss the potentially applicable Washington Administrative Code (WAC) regulations:

- WAC 173-400-040 – General Standards for Maximum Emissions
- WAC 173-400-050 – Emission Standards for Combustion and Incineration Units
- WAC 173-400-105 – Records, Monitoring, and Reporting
- WAC 173-400-108 – Excess Emissions Reporting
- WAC 173-400-115 – Standards of Performance for New Sources
- WAC 173-401 – Operating Permit Regulation
- WAC 173-460 – Controls for New Sources of Toxic Air Pollutants

4.3.1 WAC 173-400-040 – General Standards for Maximum Emissions

WAC 173-400-040 establishes standards for visible emissions for all sources and emissions units. The New Boiler will be subject to these standards and will comply in accordance with WAC 173-400-040(2) by complying with ORCAA Rule 8.2. Additionally, WAC 173-400-040 establishes

standards for SO_2 emissions from emissions units. In accordance with WAC 173-400-040(7), the average SO_2 emissions for any 60-minute period from the New Boiler will not exceed 1,000 ppm (at 7% oxygen). The New Boiler will comply with this requirement by burning natural gas fuel only.

4.3.2 WAC 173-400-050 – Emission Standards for Combustion and Incineration Units

WAC 173-400-050 establishes additional emissions standards for combustion units and incinerators. The New Boiler will be subject to these requirements. In accordance with WAC 173-400-050(1), the New Boiler will not emit particulate matter greater than 0.23 grams per dry cubic meter (0.1 grain/dscf) at standard conditions. The New Boiler will comply with this requirement by burning natural gas fuel only.

4.3.3 WAC 173-400-105 – Records, Monitoring, and Reporting

WAC 173-400-105 establishes requirements for the recordkeeping, monitoring, and reporting of emissions sources. The Facility currently complies with WAC 173-400-105 and will incorporate the New Boiler in its compliance schedule according to the applicable requirements within the Rule.

4.3.4 WAC 173-400-115 – Standards of Performance for New Sources

Per WAC 173-400-115(1)(a), Washington State has adopted the standards established in 40 CFR Part 60. The New Boiler is subject to Subpart Dc, as discussed in Section 4.1.2.2.

4.3.5 WAC 173-401 – Operating Permit Regulation

WAC 173-401 establishes provisions for an operating permit program consistent with Title V of the Federal Clean Air Act. The Facility will be a non-major source subject to 40 CFR Part 60, Subpart Dc. In accordance with WAC 173-401-300(2)(a), the Facility is not required to obtain a Chapter 401 Permit.

4.3.6 WAC 173-460 – Controls for New Sources of Toxic Air Pollutants

The requirements of this regulation have been addressed in Section 4.2.4.3, Section 4.2.8, and Section 6.

5. BEST AVAILABLE CONTROL TECHNOLOGY REVIEW

According to Rule 6.1.4(a), GP must perform a BACT analysis for all new source review air pollutants emitted by the new and modified emissions sources associated with the Project. This section presents the BACT analysis for the New Boiler.

The procedure used to determine BACT follows the "top-down" approach outlined in ORCAA Instructions for Form 6, Best Available Control Technology. The ORCAA BACT methodology is consistent with Chapter B of the U.S. EPA's Draft "*New Source Review Workshop Manual*," dated October 1990.[7] The "top-down" BACT analysis includes the following five basic steps:

- Step 1: Identify Available Control Technologies. *Prepare a compilation of all potential control technologies available. The list should not exclude technologies implemented outside the United States.*
- Step 2: Eliminate Technically Infeasible Options. *Determine if any of the technologies identified in Step 1 are not technically feasible based on physical, chemical, and engineering principles.*
- Step 3: Rank Remaining Control Technologies by Control Effectiveness. *The remaining control technologies not eliminated in Step 2 are ranked in order of most effective (i.e., lowest emissions rate) to the least. Each technology is evaluated based on economic, environmental, and energy impacts.*
- Step 4: Energy, Environmental, and Economic Considerations. *The information developed in Step 3 is objectively evaluated to determine whether economic, environmental, or energy impacts are sufficient to justify exclusion of the technology. The analysis begins with the top ranked technology and continues until the technology under consideration cannot be eliminated by any environmental, economic, and energy impacts which justify that the technology is inappropriate as BACT.*
- Step 5: Document the Identified BACT. *The highest ranked remaining technology is identified as BACT*

[7] U.S. EPA, Draft New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting, October 1990 (1990 Workshop Manual).

The BACT determination for the Project is based on the most recent information available from the ORCAA and from U.S. EPA on BACT evaluations in permit applications. This evaluation was completed by reviewing the following information:

- The U.S. EPA RBLC. The initial search encompassed the previous 10 years.
- The California Air Resources Board BACT Determination Tool Clearinghouse (CARB Clearinghouse). The initial search encompassed the previous 10 years.

The New Boiler will have NO_X, CO, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC (as Carbon), and Lead emissions from natural gas combustion. Table 5-1 summarizes the New Boiler proposed BACT.

Table 5-1
New Boiler Proposed BACT Summary

Air Contaminant	Emissions Limit	Control Technology	Compliance Method
NO_X	12 ppm @ 3% O_2	Flue Gas Recirculation	Vendor Guarantee
CO	25 ppm @ 3% O_2	Good Combustion Practices	Vendor Guarantee
VOC/Organics	None	Natural Gas Fuel and Good Combustion Practices	None
PM/PM_{10}/ $PM_{2.5}$/Metals	None	Natural Gas Fuel and Good Combustion Practices	None
SO_2	None	Natural Gas Fuel and Good Combustion Practices	None

The following subsections provide the BACT evaluations for each criteria pollutant emitted by the New Boiler. The RBLC and CARB Clearinghouse search results are provided in Appendix F.

5.1 NOx BACT

NO_X is primarily formed by two mechanisms. The combination of elemental nitrogen and oxygen in the combustion air, within the high temperature environment of the combustor, generate thermal NO_X. The oxidation of nitrogen contained in the fuel via combustion generates fuel NO_X. There are several combustion modification techniques available to reduce the amount of NO_X formed in natural gas-fired boilers.

Step 1: Identify Available Control Technologies

The CARB Clearinghouse and RBLC database were reviewed to identify control technologies and techniques for control of NO_X emissions from natural gas combustion boilers. The search yielded the following add-on control technologies and control techniques:

- Low and Ultra Low NO_X burners,
- Flue gas recirculation,
- Catalytic oxidation,
- Selective noncatalytic reduction (SNCR),
- Selective catalytic reduction (SCR), and
- Good combustion practices.

Step 2: Eliminate Technically Infeasible Options

The second step in the top-down approach is to evaluate the technical feasibility of the alternatives identified in Step 1 and eliminate those which are technically infeasible based on engineering evaluation or on chemical or physical principles. Each of the alternatives identified in Step 1 are technically feasible and evaluated in the BACT analysis.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

The remaining technically feasible control options identified in Step 2 for the control of NO_X emissions from the New Boiler have been ranked by control effectiveness in Table 5-2.

Table 5-2
NO_X Control Technology Ranking

Rank	Control Technology	Control Efficiency[8,9,10]
1	Flue gas recirculation with low NO_X burner	>90%
2	Selective catalytic reduction	70-90%
3	Low NO_X burner	30-50%
4	Selective noncatalytic reduction	30-50%
5	Good Combustion Practices	

Step 4: Energy, Environmental, and Economic Considerations

Flue gas recirculation (FGR) with a low NO_X burner is highly effective at reducing NO_X emissions from natural gas-fired boilers. Flue gas is recirculated to the combustion chamber which cools the flame temperature and lowers the amount of oxygen in the combustion zone. The reduced temperature and oxygen concentration lower the amount of thermal NO_X generated. The Facility proposes the most effective control technology with this application.

Step 5: Documentation

GP proposes NO_X BACT for the New Boiler to be flue gas recirculation with a low NO_X burner to minimize NO_X emissions. GP proposes a NO_X BACT limit of 12 ppm @ 3% O_2, which corresponds to a NO_X limit of 0.015 lb/MMBtu. The State of Washington BACT guidance for "routinely accepted BACT" specifies a limit of 9 ppm for natural gas-fired boilers.[11] However, in GP's recent experience a 9 ppm NO_X limit may not be achievable. GP received a permit to construct a natural gas-fired boiler with a 9 ppm NO_X limit at the GP Camas Mill, located within the Southwest Clean Air Agency (SWCAA). Upon commissioning, the vendor was unable to meet the 9 ppm NO_X guarantee. A BACT limit must be "achievable" on a continual basis, over each averaging period, for the lifetime of the unit. As observed in the CARB Clearinghouse, a 9 ppm

[8] U.S. EPA Technical Bulletin: *Nitrogen Oxides (NO_X), Why and How They are Controlled*, November 1999
[9] U.S. EPA Air Pollution Control Technology Fact Sheet, Selective Non-Catalytic Reduction, EPA-425/F-03-031, 2003.
[10] U.S. EPA Air Pollution Control Technology Fact Sheet, Selective Catalytic Reduction, EPA-425/F-03-032, 2003
[11] Department of Ecology, Best Available Control Technology, ECY 070-410a-g, February 2013. https://apps.ecology.wa.gov/publications/documents/ecy070410d.pdf

NO_X limit is typically applied as the Lowest Achievable Emissions Rate (LAER) in ozone nonattainment areas since NO_X is a precursor to both ozone and $PM_{2.5}$. A BACT limit in attainment areas can be higher than 9 ppm. As such, GP proposes a limit of 12 ppm which is in the range of limits applied to similar sized boilers in the RBLC and CARB Clearinghouse. This limit is believed to be achievable over the lifetime of the unit. A The NO_X BACT limit will be guaranteed by the manufacturer. GP will demonstrate continuous compliance by operating and maintaining the New Boiler according to manufacturer recommendations, including periodic tune-ups.

5.2 CO BACT

CO emissions occur as a result of incomplete combustion of carbon-based fuels. The primary factors influencing CO formation are temperature and residence time within the high temperature environment of the combustor. Variations in fuel carbon content have relatively little effect on overall CO emissions. Generally, the effect of the combustion zone temperature and residence time on CO emissions generation is the opposite of their effect on NO_X emissions generation. Higher combustion zone temperatures and residence times lead to more complete combustion and lower CO emissions, but higher NO_X emissions.

Step 1: Identify Available Control Technologies

The CARB Clearinghouse and RBLC database were reviewed to identify control technologies and techniques for control of CO emissions from natural gas combustion boilers. The search yielded the following adopted as BACT for natural gas-fired boiler CO emissions:

- Good combustion practices, and
- Catalytic Oxidation.

Good combustion practices are a method of controlling CO emissions from natural gas-fired boilers. Maintaining optimum combustion efficiency, and/or implementing appropriate maintenance procedures are examples of good combustion practices. Catalytic oxidation is an add-on control technology designed to reduce CO emissions. The catalysts are typically made of a precious metal and operate at temperatures in the range of 800 degrees Fahrenheit (°F) to 1,000°F. The catalysts cause excess oxygen (O_2) to react with CO to form carbon dioxide (CO_2)

Step 2: Eliminate Technically Infeasible Options

The second step in the top-down approach is to evaluate the technical feasibility of the alternatives identified in Step 1 and eliminate those which are technically infeasible based on engineering evaluation or on chemical or physical principles. Each of the alternatives identified in Step 1 are technically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

The remaining technically feasible control options identified in Step 2 for the control of CO emissions from the New Boiler have been ranked by control effectiveness in Table 5-3.

Table 5-3
CO Control Technology Ranking

Rank	Control Technology	Control Efficiency
1	Catalytic oxidation	98%[12][13]
2	Good combustion practices	Unknown

Step 4: Energy, Environmental, and Economic Considerations

Catalytic oxidation is a proven post-combustion control technology that uses a catalyst matrix to oxidize CO, VOC, and other pollutants. In order for the natural gas-fired boiler to meet the minimum temperature requirement for catalytic oxidation to be effective, the system would need to be equipped with a supplementary pre-heater to raise the exhaust gas temperature. This add-on control option adds to the complexity, costs, and emissions associated with the overall system. Despite the requirement to raise the exhaust gas temperature of the boiler to initiate and sustain the reaction, catalytic oxidation was identified as a CO control technology for two boilers at two different facilities (i.e., CF Industries Nitrogen, LLC - Port Neal Nitrogen Complex and EmberClear Gas-to-Liquids Facility in Mississippi) in the review of the U.S. EPA RBLC database. The natural gas-fired boilers at these facilities are considerably larger with rated heat input

[12] MJ Bradley & Associates and the Commission for Environmental Cooperation of North America, *Best Available Technology for Air Pollution Control: Analysis Guidance and Case Studies for North America*, February 2005
[13] U.S. EPA Air Pollution Control Technology Fact Sheet, Catalytic Incinerator, EPA-425/F-03-018, 2003.

capacities of 456 MMBtu/hr and 261 MMBtu/hr, respectively. The proposed New Boiler is significantly smaller with a proposed rated heat input capacity of 20.94 MMBtu/hr. The exhaust would require preheating (additional energy requirements and productions of combustion) to raise the exhaust gas temperature to the operating range required for catalytic oxidation. The addition of an oxidation catalyst as an add-on control technology for the proposed New Boiler is eliminated in this step. Therefore, GP proposes the use of good combustion practices to achieve the most stringent CO emissions limit for the New Boiler.

Step 5: Documentation

GP proposes CO BACT for the New Boiler to be good combustion practices. GP proposes a CO BACT limit of 25 ppm @ 3% O_2, which corresponds to a CO limit of 0.018 lb/MMBtu. GP will demonstrate continuous compliance by operating and maintaining the New Boiler according to manufacturer recommendations, including periodic tune-ups.

5.3 VOC/ORGANICS BACT

As with CO emissions, VOCs are emitted from natural gas-fired boilers as a product of incomplete combustion. Techniques for reducing VOC emissions can increase NO_X emissions. Consequently, as with CO emissions, achieving low VOC and NO_X emissions rates is a balance of the boiler design and operation. The same approaches that can be used to reduce CO emissions from combustion units can also be used for reducing emissions of VOC and organics.

Catalytic oxidation was previously excluded due to economic, energy, and environmental considerations. As such, natural gas fuel selection and good combustion practices were identified in review of the CARB Clearinghouse and RBLC as the remaining viable VOC control technique for boilers of similar size and use. GP proposes that the use of natural gas and good combustion practices represents BACT for VOCs for the Project. GP will demonstrate continuous compliance by operating and maintaining the New Boiler according to manufacturer recommendations, including periodic tune-ups.

5.4 PM/PM_{10}/$PM_{2.5}$/METALS BACT

$PM/PM_{10}/PM_{2.5}$ and lead emissions from natural gas-fired boilers originate from the ash content of the fuel, and from products of incomplete combustion. Based on available information, the following PM control techniques and technologies were identified:

- Electrostatic precipitators,
- Fabric filters,
- Scrubbers,
- Use of low ash content fuel such as natural gas, and
- Good combustion practices.

A review of the CARB Clearinghouse and U.S. EPA's RBLC database found that electrostatic precipitators, fabric filters, and scrubbers were not identified as control technologies that have been applied on natural gas-fired boilers similar to the proposed New Boiler. Therefore, these technologies are not considered "available" for the purposes of this Project. GP proposes use of natural gas fuel and good combustion practices as BACT for $PM/PM_{10}/PM_{2.5}$ and Lead. GP will demonstrate continuous compliance by operating and maintaining the New Boiler according to manufacturer recommendations, including periodic tune-ups.

5.5 SO_2 BACT

SO_2 emissions from natural gas-fired boilers result from the oxidation of sulfur in the fuel. During combustion, the majority of the sulfur is emitted as SO_2. A small portion of the sulfur is further oxidized to sulfur trioxide (SO_3). When the flue gas temperature drops below the dew point temperature, SO_3 is converted to sulfuric acid mist (SAM). Based on available information, the following PM control techniques and technologies were identified:

- Wet Scrubbers (or desulfurization unit),
- Use of low sulfur content fuels, and
- Good combustion practices.

A review of the CARB Clearinghouse and U.S. EPA's RBLC database found that wet scrubbers were not identified as control technologies that have been applied on natural gas-fired boilers similar to the proposed New Boiler. Therefore, this technology are not considered "available" for the purposes of this Project. Therefore, GP proposes use of low sulfur gaseous fuel, along with good combustion practices, as BACT for SO_2 for this Project. The New Boiler will utilize natural gas and will operate using good combustion practices. GP will demonstrate continuous compliance by operating and maintaining the New Boiler according to manufacturer recommendations, including periodic tune-ups.

6. REFINED AIR DISPERSION MODELING ANALYSIS

The following sections describe the refined air dispersion modeling methodology and predicted ambient air concentrations for each TAP and at each applicable averaging period compared to the ASIL thresholds.

6.1 PROPOSED AIR DISPERSION MODELING METHODOLOGY

This section summarizes the model selection, modeling parameters, and methodology for the refined air dispersion modeling evaluation.

6.1.1 Model Selection

A refined air dispersion modeling evaluation was conducted using source-specific characterization and data. The air quality modeling used the American Meteorological Society/Environmental Protection Agency (AMS/EPA) (AERMOD) modeling system to perform refined air quality modeling. AERMOD is the U.S. EPA's preferred model for refined regulatory air quality modeling analyses (Appendix W).[14]

AERMOD consists of two pre-processors and a dispersion model. AERMAP is the terrain pre-processor and AERMET is the meteorological pre-processor. AERMAP characterizes the surrounding terrain and can generate elevations for sources, structures, and receptors within the modeling domain. AERMET is used to generate an hourly profile of meteorological conditions and boundary layer characteristics. In addition, two non-regulatory programs (AERMINUTE and AERSURFACE) are available for preparing inputs to AERMET. AERMINUTE is recommended for use when incorporating meteorological data from National Weather Service (NWS) Automated Surface Observing System (ASOS) sites to reduce the number of calms and missing winds in AERMOD (Appendix W). AERSURFACE is used to determine surface roughness lengths, noontime albedo, and daytime Bowen ratio inputs to AERMET (U.S. EPA, 2020). The air quality

[14] U.S. EPA, 2017: Guideline on Air Quality Models. 40 CFR Part 51 Appendix W.

modeling utilized the following program versions, which were current at the time of Plan submittal, to develop the meteorological inputs:

- AERMINUTE 15272
- AERSURFACE 20060
- AERMET 22112
- AERMAP 18081
- AERMOD 22112
- BPIPPRM 04274

AERMOD has user-selectable options that may be chosen to configure the dispersion model for regulatory and non-regulatory applications. In this case, the air quality modeling was performed for a regulatory application. Therefore, regulatory default options were used for the air quality modeling, including the following:

- Stack-tip Downwash
- Accounting of Elevated Terrain Effects
- Calms Processing Routine
- Missing Data Processing Routine
- No Exponential Decay for Rural Mode

6.1.2 Receptors and Terrain

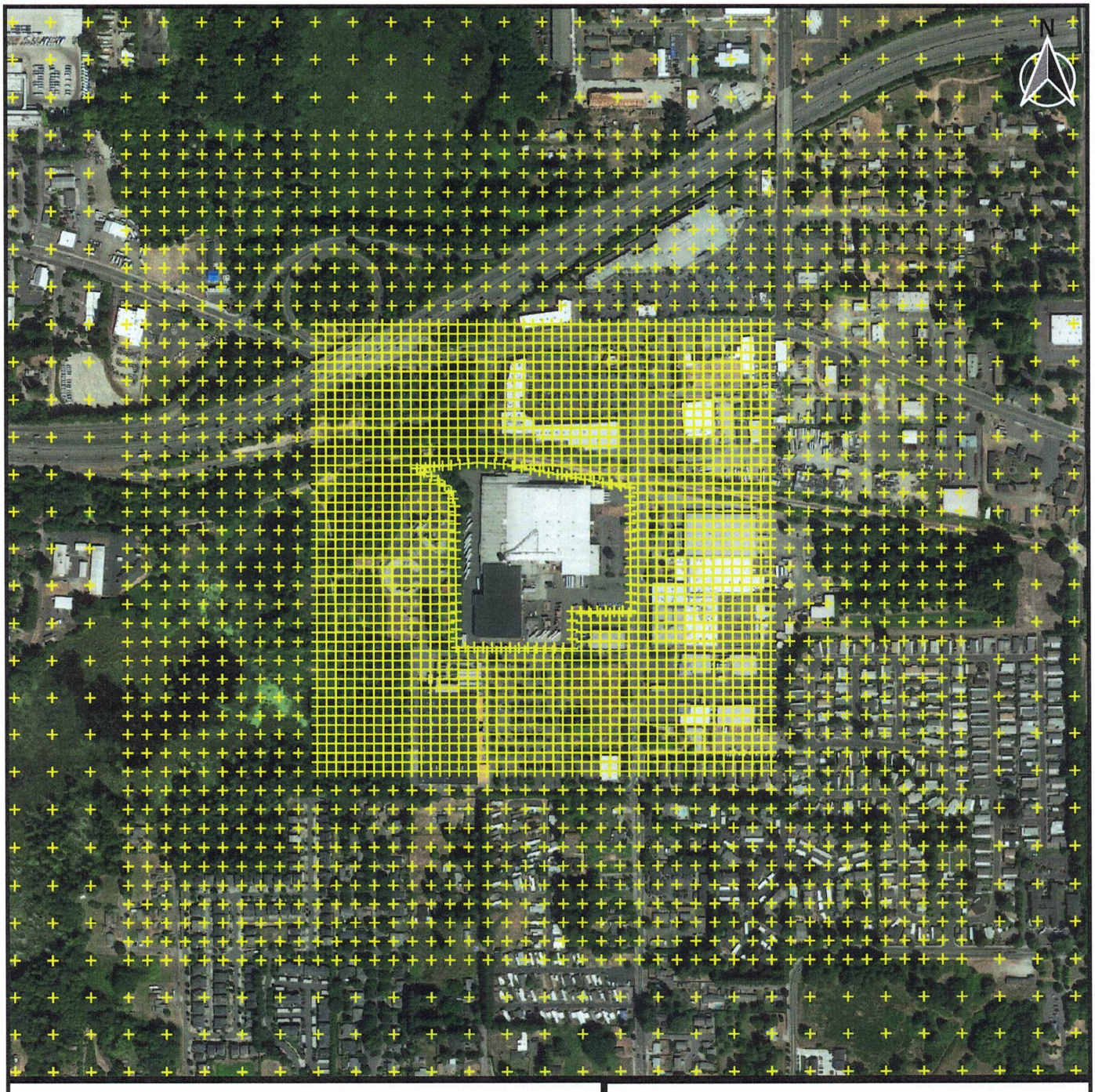
The AERMOD terrain pre-processor AERMAP was used to process 1/3 arc-second (approximately 10 m) United States Geological Survey (USGS) National Elevation Dataset (NED) files, in Georeferenced Tagged Image File Format (GeoTIFF), to create ground elevation and hill height scales for each receptor in a five-km by five-km domain (i.e., the area that is modeled), centered at the Facility. Air quality modeling used the NAD83 horizontal datum.

ORCAA follows Ecology guidance used for health impact assessments for receptors networks.[15] In accordance with Ecology guidance, a Cartesian receptor network (Figure 6-1) is proposed, to be centered on the approximate Facility center. Receptors were placed in publicly accessible locations (i.e., ambient air) extending outward from the Facility within the modeling domain and placed at 1.5 m heights using the AERMOD flagpole receptor functionality. Beyond the property boundary, receptors were placed at:

- 12.5 m intervals out to 300 m,
- 25 m intervals from 300 m to 550 m,
- 50 m intervals from 550 m to 1,050 m,
- 100 m intervals from 1,050 m to 2,150 m,
- 300 m intervals from 2,150 m to 4,650 m, and
- 600 m intervals from to 4,650 m to 5,000 m

Additionally, discrete receptors were placed along the property boundary at 25 m intervals.

[15] Ecology, Revised 2015: Guidance Document – First, Second, and Third Tier Review of Toxic Air Pollution Sources (Chapter 173-460 WAC). Washington Department of Ecology. Publication Number 208-02-025, August 2015.



Legend

+ Receptor

0 200 400 600 m

Figure 6-1
Receptor Network

Georgia-Pacific Corrugated LLC
Olympia Container
Olympia, Washington

PREPARED BY: R.C.	CHECKED BY: J.B.
DATE CREATED: March 2023	PROJECT NO.: 01720-0001

ALL4

Aerial Imagery Courtesy of Google Satellite

6.2 STACK PARAMETERS AND EMISSIONS RATES

Both the Existing Boiler and the New Boiler emissions points were characterized as vertically oriented stacks with no obstructions, such as rain caps. As vertically releasing vents without rain caps, each of the emissions points were modeled using the AERMOD POINT source type.

Modeled emissions rates are based on annual emissions, in tpy, and converted to modeling input units of grams per second (g/s). Modeled emissions rates for the Existing Boiler were modeled as negative emissions to reflect an off-set of the new emissions, as the Existing Boiler will be shut down at completion of the Project. Emissions from both sources were evaluated at all affected receptors, with the maximum receptor value compared to respective ASILs.

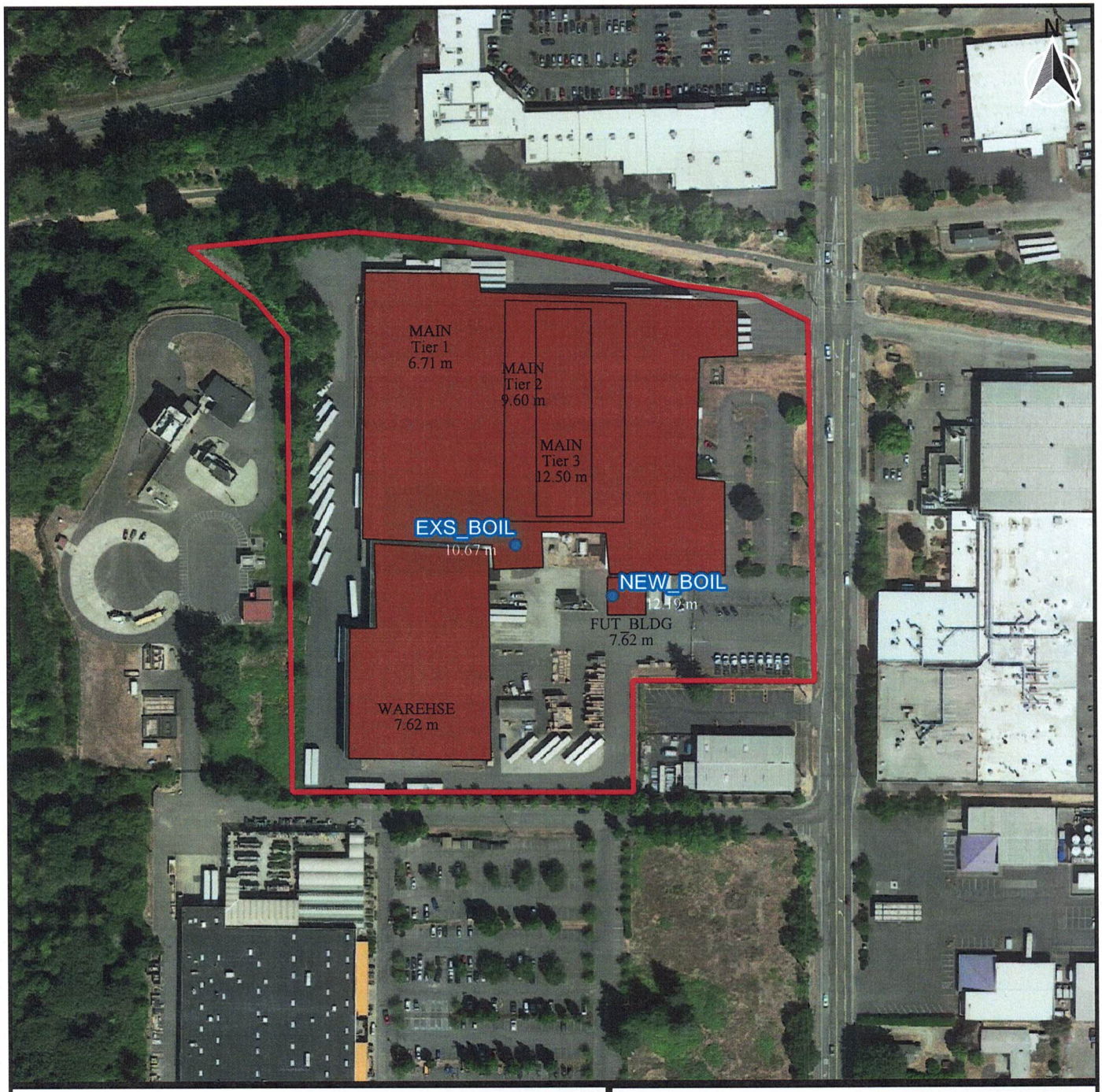
Source parameters and modeled emissions rates are presented in the tables below. A site map, including emissions points, structure location and elevations, and property line, is presented in Figure 6-2.

Table 6-1
Modeled Emissions Rates

Model ID	Description	Cadmium	Chromium VI
		g/s	g/s
NEW_BOIL	New Natural Gas-Fired Boiler	2.83E-06	1.44E-07
EXS_BOIL	Existing Natural Gas-Fired Boiler	-6.89E-07	-3.51E-08

Table 6-2
Modeled Source Parameters

Model ID	UTM (Easting) [m]	UTM (Northing) [m]	Elevation [m]	Release Height [m]	Gas Exit Temperature [K]	Gas Exit Velocity [m/s]	Inside Diameter [m]
NEW_BOIL	511,531.78	5,209,477.78	61.84	12.192	491.5	6.91	0.76
EXS_BOIL	511,489.30	5,209,500.55	61.84	10.67	491.5	2.89	0.91



Legend

- Property Boundary
- Structure
- Point Source

0 50 100 150 200 m

Figure 6-2
Site Map

Georgia-Pacific Corrugated, LLC
Olympia Container
Olympia, Washington

PREPARED BY: R.C.	CHECKED BY: J.B.
DATE CREATED: June 2023	PROJECT NO.: 01720-0001

Aerial Imagery Courtesy of Google Satellite

6.3 LAND USE ANALYSIS

Appendix W specifies a procedure, based on Auer (1978), to determine whether land usage surrounding the modeled source is primarily urban or rural.[16] Two methods can be used for performing this procedure: a land use classification or a population density evaluation. The land use classification procedure is considered the more definitive methodology (Appendix W) and evaluates land use within three km of a Facility.

An evaluation of Google Earth aerial imagery indicates that the area within three km of the facility generally consists of residential and park land, although some industrial/commercial areas that would be considered as urban under the Auer Class 23 (Developed, Medium Intensity) or Class 24 (Developed, High Intensity) are located to the immediate west of the Facility. Despite the presence of some commercial areas near the Facility, the model used rural dispersion characterization, as a conservative approach, in the refined air dispersion modeling evaluation.

6.4 GOOD ENGINEERING PRACTICE STACK HEIGHT ANALYSIS

A GEP stack height analysis was conducted to evaluate if stack emissions are subject to building wake effects and aerodynamic downwash caused by buildings included in the air quality modeling, in accordance with the "*Guideline for Determination of Good Engineering Practice Stack Height*" (U.S. EPA, 1985).[17] If a stack is sufficiently close to a building, or if located adjacent to or on a building, the plume from the stack can be entrained in the building's wake, diminishing plume rise that can result in increased ground level ambient concentrations. Facilities with stack heights below their corresponding GEP formula heights must account for potential building wake effects within the air quality modeling.

There are two definitions of GEP stack height: formula GEP stack height; and regulatory GEP stack height. U.S. EPA requires building downwash effects to be evaluated for nearby buildings

[16] Auer, A. H., 1978: Correlation of Land Use and Cover with Meteorological Anomalies. Journal of Applied Meteorology, 17:636-643.
[17] U.S. EPA, 1985: Guideline for Determination of Good Engineering Practice Stack Height (Revised). EPA-450/4-80-023R, Research Triangle Park, NC.

when a stack is less than formula GEP stack height. Regulatory GEP stack height is the greater of 65 m or formula GEP stack height. Formula GEP stack height is defined as:

$$H_{GEP} = H_B + 1.5L_B$$

where:

H_{GEP} = formula GEP stack height,
H_B = the building's height above stack base, and
L_B = the lesser of the building's height or maximum projected width.

The current version of U.S. EPA's Building Profile Input Program for PRIME (BPIPPRM) was used to calculate wind direction-specific downwash parameters to evaluate stacks considered close enough to a building to be affected by downwash, defined as the lesser of 0.8 km or $5L_B$ of the building in any wind direction. Due to the use of BPIPPRM and associated cavity algorithms, a separate cavity analysis was not conducted.

The existing Facility includes two primary buildings that may subject stack emissions to downwash (Table 6-3). The main building has a sloped roof over the center of the building with a height of 41 feet at its apex. A secondary warehouse building is located to the southwest of the main building. BPIPPRM modeling files are provided as part of the final modeling report. A future building, associated with the New Boiler is expected to be constructed to the immediate south of the main building.

Table 6-3
Summary of Building Characteristics

Structure Description	Corner Coordinates (UTM NAD83 Zone 10)		Base Elevation	Structure Tier Height
	Easting (m)	Northing (m)	(m)	(m)
Main Building - Tier 1	511,423.68	5,209,622.06	61.84	6.71
	511,473.78	5,209,621.33		
	511,474.50	5,209,613.35		
	511,587.04	5,209,608.99		
	511,587.04	5,209,585.03		
	511,570.34	5,209,584.30		
	511,568.89	5,209,530.58		
	511,581.23	5,209,529.12		
	511,581.23	5,209,487.01		
	511,530.41	5,209,487.74		
	511,528.96	5,209,505.89		
	511,500.64	5,209,506.62		
	511,501.37	5,209,490.64		
	511,479.58	5,209,489.92		
	511,478.86	5,209,500.81		
	511,422.23	5,209,503.71		
Main Building - Tier 2	511,485.17	5,209,609.63		9.60
	511,538.10	5,209,608.29		
	511,536.86	5,209,510.71		
	511,484.10	5,209,511.35		
Main Building - Tier 3	511,498.55	5,209,513.50		12.50
	511,498.55	5,209,605.78		
	511,522.89	5,209,605.78		
	511,522.89	5,209,513.50		
Warehouse	511,427.31	5,209,501.53	61.84	7.62
	511,477.41	5,209,498.63		
	511,478.13	5,209,404.97		
	511,415.69	5,209,405.70		
	511,416.42	5,209,463.78		
	511,428.03	5,209,463.78		
Future New Boiler Building	511,529.57	5,209,469.38	61.84	7.62
	511,529.57	5,209,486.15		
	511,546.34	5,209,486.15		
	511,546.34	5,209,469.38		

6.5 METEOROLOGY

U.S. EPA recommends that AERMOD be run with a minimum of five years of off-site data or one year of on-site meteorological data to "*acquire enough meteorological data to ensure worst-case meteorological conditions are adequately represented in the model results*" (U.S. EPA, 2017). In consultation with ORCAA, GP used the current model versions of AERMINUTE, AERSURFACE, and AERMET to produce a five-year (2018-2022) meteorological dataset that is representative of conditions at the Facility.

AERSURFACE was used to calculate albedo, Bowen ratio, and surface roughness length parameters, based on 2016 and/or 2019 National Land Cover Data (NLCD) available from the Multi-Resolution Land Characteristics (MRLC) database.[18] Climatological data for the Olympia area was used to compare monthly soil moisture conditions with the climatological norm. For months with monthly precipitation below the 30th percentile of the climatological norm, the month was classified as dry, while months with monthly precipitation above the 70th percentile of the climatological norm classified as wet. No months of continuous snow are included in the evaluation.

Per ORCAA-guidance, one-minute ASOS data was incorporated into the dataset, with a minimum wind speed threshold of 0.5 meters per second (m/s) and application of the ADJ_U* options applied. Selection of a representative meteorological dataset must include consideration for terrain and proximity to adequately characterize boundary layer conditions that would be expected at the Facility. Surface observations were obtained for the Olympia Regional Airport (KOLM) in Olympia and upper air radiosonde observations were obtained for the Quillayute State Airport (KUIL) in Quillayute, Washington. The Olympia Regional Airport is located approximately 8.5 km south-southwest of the Facility and has a similar elevation (60.87 m AMSL), geographic, and demographic setting as the Facility. The similar conditions of the Facility supports the use of the Olympia Regional Airport in the refined dispersion modeling analysis.

[18] U.S. EPA, 2020: User's Guide for AERSURFACE Tool. EPA-454/B-20-008, Research Triangle Park, NC.

6.6 MODELING RESULTS

The model-predicted concentrations are compared to ASIL thresholds to determine if Project emissions are below the thresholds or if there is a need to perform a second-tier or third-tier analysis. As shown in the following table, the model-predicted concentrations are below ASILs. No further review is required. Electronic copies of supporting model input and output files are provided with this application.

Table 6-4
Modeling Results

Pollutant	Model Scenario	Avg. Period	Modeled Maximum Annual Concentration ($\mu g/m^3$)	Maximum Year	UTM (Easting) (m)	UTM (Northing) (m)	ASIL ($\mu g/m^3$)
Cadmium	Olympia_ CADM_04_A	year	4.77E-05	2020	511,595.75	5,209,611.42	2.40E-04
Chromium VI	Olympia_ CHRO_04_A	year	2.43E-06	2020	511,595.75	5,209,611.42	4.00E-06

APPENDIX A –
MANUFACTURER SPECIFICATIONS

Firetube Boiler Data Summary	
Application:	Steam
Fuel Series:	Natural Gas
Boiler Capacity:	500 HP
Design Pressure:	250# ST
Operating Pressure:	170 psig
Steam Rating:	17,250 #/HR, from and at 212°F
Safety Valve Setting:	240 & 250 psig
Gas NOx Emissions Level:	9 ppm
Gas CO Emissions Level:	25 ppm
Turndown:	6:1
Excess Air:	4.5% Stack O2 from 50%-100% Firing Rate; 5.2% Stack O2 at Low Fire
Required Power Supply:	54.5 FLA @ 460/3/60
Available Site Gas Pressure:	692.5 in. w.c. (25 psig)
Fuel Consumption:	20,412 cfh
Approximate Site Altitude:	150 ft. ASL
Insurance Requirements:	NFPA-85_2011 (XL-Gap), FM
Proposed System Solution:	**One (1) CBEX-2W-700-500-250ST (460/3/60) 9ppm NOx**

(representative image)

APPENDIX B –
EMISSIONS INVENTORY AND TAP EVALUATION

Georgia-Pacific Corrugated LLC
Olympia Container

SUMMARY OF POTENTIAL EMISSIONS

	PM (Filterable)		PM_{10} (Total)		$PM_{2.5}$ (Total)		CO		VOC		SO_2		NO_X		Lead		Total HAP		Total GHG		Total CO_2e	
Emission Unit/ID	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Corrugating Operation/ EU-01									2.30	10.09							1.44	6.29				
Corn Starch Silo/ EU-02	0.051	0.23	0.051	0.23	0.051	0.23																
Finishing Operations/ EU-03									4.25	18.63							0.24	1.04				
Scrap Paper Collection System/ EU-04	17.74	77.71	12.83	56.19	2.49	10.90																
New Boiler	0.039	0.17	0.16	0.68	0.16	0.68	0.39	1.70	0.112	0.49	0.0122	0.054	0.31	1.34	1.02E-05	4.47E-05	0.039	7.50	2,450	10,732	2,453	10,743
Space Heaters / Exempt	0.0017	0.0073	0.0067	0.029	0.0067	0.029	0.074	0.32	0.0049	0.021	5.29E-04	0.0023	0.088	0.39	4.41E-07	1.93E-06	0.0017	0.0073	105.30	461.21	105.41	461.68
Parts Washer									0.13	0.56												
Wastewater Treatment									0.014	0.063												
Total Emissions	**17.83**	**78.11**	**13.04**	**57.13**	**2.70**	**11.84**	**0.46**	**2.02**	**6.80**	**29.79**	**0.013**	**0.056**	**0.39**	**1.72**	**1.06E-05**	**4.66E-05**	**1.71**	**14.84**	**2,556**	**11,193**	**2,558**	**11,205**

Georgia-Pacific Corrugated LLC
Olympia Container

POTENTIAL HAP/TAP EMISSIONS

Pollutant	CAS. No.	Boiler		Space Heater		Corrugator		Finishing Operations		Total Emissions	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Organic Compounds											
Acetaldehyde	75-07-0					0.076	0.33	2.45E-05	1.07E-04	0.076	0.33
Acrolein	107-02-8					0.0025	0.011			0.0025	0.0110
Acrylic Acid	79-10-7							0.059	0.26	0.059	0.26
Benzene	71-43-2	4.29E-05	1.88E-04	1.85E-06	8.12E-06					4.47E-05	1.96E-04
Dichlorobenzene	106-46-7	2.45E-05	1.07E-04	1.06E-06	4.64E-06					2.56E-05	1.12E-04
Diethylene glycol monoethyl ether (DEGMEE)	111-90-0							0.15	0.68	0.15	0.68
Formaldehyde	50-00-0	0.0015	0.0067	6.62E-05	2.90E-04	0.039	0.17	9.79E-05	4.29E-04	4.10E-02	0.18
Hexane	110-54-3	0.037	0.16	0.0016	0.0070					0.038	0.17
Isopropyl Alcohol (TAP)	67-63-0							0.31	1.36	0.31	1.36
Methanol	67-56-1					1.32	5.77	0.017	0.073	1.33	5.84
Naphthalene	91-20-3	1.25E-05	5.45E-05	5.38E-07	2.36E-06					1.30E-05	5.69E-05
Phenol	108-95-2					-	-			-	-
Propionaldehyde	123-38-6					5.68E-04	2.49E-03			5.68E-04	2.49E-03
Propylene Glycol (TAP)	57-55-6							0.16	0.70	0.16	0.70
Styrene	100-42-5							0.0066	0.029	6.61E-03	0.029
Toluene	108-88-3	6.94E-05	3.04E-04	3.00E-06	1.31E-05					7.24E-05	3.17E-04
Metals											
Chromium III	16065-83-1	2.74E-05	1.20E-04	1.19E-06	5.19E-06					2.86E-05	1.25E-04
Chromium VI	12018-01-8	1.14E-06	5.01E-06	4.94E-08	2.16E-07					1.19E-06	5.22E-06
Cobalt	7440-48-4	1.71E-06	7.51E-06	7.41E-08	3.25E-07					1.79E-06	7.83E-06
Lead	7439-92-1	1.02E-05	4.47E-05	4.41E-07	1.93E-06					1.06E-05	4.66E-05
Manganese	7439-96-5	7.76E-06	3.40E-05	3.35E-07	1.47E-06					8.09E-06	3.54E-05
Mercury	7439-97-6	5.31E-06	2.32E-05	2.29E-07	1.00E-06					5.54E-06	2.43E-05
Nickel	7440-02-0	4.29E-05	1.88E-04	1.85E-06	8.12E-06					4.47E-05	1.96E-04
Selenium	7782-49-2	--	--	2.12E-08	9.28E-08					2.12E-08	9.28E-08
Polycyclic Organic Matter (POM)											
Fluoranthene	206-44-0	6.12E-08	2.68E-07	2.65E-09	1.16E-08					6.39E-08	2.80E-07
Fluorene	86-73-7	5.72E-08	2.50E-07	2.47E-09	1.08E-08					5.96E-08	2.61E-07
2-Methylnaphthalene	91-57-6	4.90E-07	2.15E-06	2.12E-08	9.28E-08					5.11E-07	2.24E-06
Phenanthrene	85-01-8	3.47E-07	1.52E-06	1.50E-08	6.57E-08					3.62E-07	1.59E-06
Pyrene	129-00-0	1.02E-07	4.47E-07	4.41E-09	1.93E-08					1.06E-07	4.66E-07
Total POM	-	1.06E-06	4.63E-06	4.57E-08	2.00E-07					1.10E-06	4.83E-06
Total HAP Emissions		**0.039**	**0.17**	**0.0017**	**0.0073**	**1.44**	**6.29**	**0.24**	**1.04**	**1.71**	**7.50**

Total HAPs-TAPs

POTENTIAL EMISSIONS CALCULATIONS

Emission Unit ID: New Boiler
Stack ID: N/A

PRODUCTION/OPERATION DATA

Operating Hours	8,760	hrs/yr
Burner Rated Capacity [1]	20.94	MMBtu/hr
Natural Gas HHV	1,026	Btu/scf
Annual Natural Gas Usage	178.8	MMCF/yr

1. Proposed New Boiler will have a capacity of 500 HP and a fuel consumption of 20,412 cubic feet per hour.

EMISSIONS CALCULATIONS

Pollutant	Emissions Factor [8]		Potential Emissions Rate		Modeling Significance Thresholds	
	lb/MMBtu	Reference	lb/hr	tpy	Threshold	Units
Criteria Air Pollutants						
NO_X	0.015	1	0.31	1.34	4.00	tons per year
CO	0.018	1	0.39	1.70	10.00	tons per year
Total Particulate			0.16	0.68	2.50	tons per year
Filterable PM	1.85E-03	2A	0.039	0.17	--	--
Total PM_{10}	7.41E-03	3	0.16	0.68	1.50	tons per year
Total $PM_{2.5}$	7.41E-03	3	0.16	0.68	1.50	tons per year
Condensable PM	5.56E-03	1B	0.12	0.51	--	--
Filterable PM_{10}	1.85E-03	1B	3.88E-02	0.17	--	--
Filterable $PM_{2.5}$	1.85E-03	1B	3.88E-02	0.17	--	--
SO_2	5.85E-04	1A	1.22E-02	5.36E-02	4.00	tons per year
VOC as C	5.36E-03	1C	0.11	0.49	--	--
Lead	4.87E-07	1A	1.02E-05	4.47E-05	120.00	pounds per year
Greenhouse Gases						
Total CO_2e	117.12	4	2,453	10,743	--	--
Total GHG	117.00	5	2,450	10,732	--	--
CO_2	117.00	6	2,450	10,732	--	--
CH_4	0.0022	6	0.046	0.20	--	--
N_2O	0.00022	6	0.0046	0.020	--	--
Hazardous Air Pollutants						
Benzene	2.05E-06	1D	4.29E-05	1.88E-04		
Dichlorobenzene	1.17E-06	1D	2.45E-05	1.07E-04		
Formaldehyde	7.31E-05	1D	1.53E-03	6.71E-03		
n-Hexane	1.75E-03	1D	3.67E-02	0.16		
Naphthalene	5.95E-07	1D	1.25E-05	5.45E-05		
Toluene	3.31E-06	1D	6.94E-05	3.04E-04		
Trace Metals						
Arsenic	1.95E-07	1E	4.08E-06	1.79E-05		
Cadmium	1.07E-06	1E	2.25E-05	9.83E-05		
Chromium (III)	1.31E-06	1E, 7	2.74E-05	1.20E-04		
Chromium (VI)	5.46E-08	1E, 7	1.14E-06	5.01E-06		
Cobalt	8.19E-08	1E	1.71E-06	7.51E-06		
Lead	4.87E-07	1F	1.02E-05	4.47E-05		
Manganese	3.70E-07	1E	7.76E-06	3.40E-05		
Mercury	2.53E-07	1E	5.31E-06	2.32E-05		
Nickel	2.05E-06	1E	4.29E-05	1.88E-04		
Polycyclic Organic Matter						
Fluoranthene	2.92E-09	1D	6.12E-08	2.68E-07		
Fluorene	2.73E-09	1D	5.72E-08	2.50E-07		
2-Methylnaphthalene	2.34E-08	1D	4.90E-07	2.15E-06		
Phenanthrene	1.66E-08	1D	3.47E-07	1.52E-06		
Pyrene	4.87E-09	1D	1.02E-07	4.47E-07		
Total HAP Emissions			**3.85E-02**	**0.17**		

References:

1 NO_X and CO emissions factors based on vendor guarentee of 9 ppm for NO_X and 25 ppm for CO.

2 EPA, Compilation of Air Emissions Factors (5th Edition). Section 1.4, *Natural Gas Combustion* (July 1998). Emission factors provided in units of lb/MMscf converted to lb/MMBtu assuming 1,026 Btu/scf.

A Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion."

B Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion." Footnote c: "All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter."

C Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion." Emission factor selected for VOC.

D Table 1.4-3 "Emission Factors for Speciated Organic Compounds from Natural Gas Combustion."

E Table 1.4-4 "Emission Factors for Metals from Natural Gas Combustion."

F Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion."

3 Total PM_{10} represents sum of filterable PM_{10} and condensable PM. Total $PM_{2.5}$ represents sum of filterable $PM_{2.5}$ and condensable PM.

4 Total CO_2e is the sum of each individual CO_2, CH_4, and N_2O emission factor multiplied by its global warming potential, as given in Table A-1 of 40 CFR Part 98:

CO_2 GWP = 1 CH_4 GWP = 25 N_2O GWP = 298

5 Total GHG is the sum of the individual CO_2, CH_4, and N_2O emission factors.

6 Emission factors are from EPA's Mandatory Reporting Rule for Greenhouse Gases, 40 CFR Part 98, Subpart C, Tables C-1 and C-2. Emission factors are provided in kg/MMBtu and converted to lb/MMBtu for natural gas.

7 Chromium is divided into Chromium III and Chromium VI based on the EPA augmentation assuming Chromium (III) is 96% of total Chromium and Chromium (VI) is 4% of total Chromium.

https://www.epa.gov/sites/default/files/2017-10/documents/master_module_2017eic_eis_nei_training_module1_final.pdf

8 Pollutants in AP-42 with emissions factors equal to the method detection level were not included in the evaluation.

PAST ACTUAL TOXIC AIR POLLUTANT EMISSIONS CALCULATIONS

Emission Unit ID: **Existing Boiler**

Stack ID: **N/A**

PRODUCTION/OPERATION DATA: based on the average of 2021 and 2022 actual operating data [ORCAA Rule 1.4]

Operation Hours	6,408	hr/yr
Burner Rated Capacity	44,703	MMBtu/yr
Natural Gas HHV	1,026	Btu/scf
Annual Natural Gas Usage	43.6	MMCF/yr

Operating hours are based on normal operations, 24 hours per day 5 days per week.

EMISSIONS CALCULATIONS

Pollutant	Emissions Factor [3]		Actual Emissions Rate	
	lb/MMBtu	Reference	lb/hr	tpy
Hazardous Air Pollutants				
Benzene	2.05E-06	1A	1.43E-05	4.57E-05
Dichlorobenzene	1.17E-06	1A	8.16E-06	2.61E-05
Formaldehyde	7.31E-05	1A	5.10E-04	1.63E-03
n-Hexane	1.75E-03	1A	1.22E-02	3.92E-02
Naphthalene	5.95E-07	1A	4.15E-06	1.33E-05
Toluene	3.31E-06	1A	2.31E-05	7.41E-05
Trace Metals				
Arsenic	1.95E-07	1B	1.36E-06	4.36E-06
Cadmium	1.07E-06	1B	7.48E-06	2.40E-05
Chromium (III)	1.31E-06	1B, 2	9.14E-06	2.93E-05
Chromium (VI)	5.46E-08	1B, 2	3.81E-07	1.22E-06
Cobalt	8.19E-08	1B	5.71E-07	1.83E-06
Lead	4.87E-07	1C	3.40E-06	1.09E-05
Manganese	3.70E-07	1B	2.58E-06	8.28E-06
Mercury	2.53E-07	1B	1.77E-06	5.66E-06
Nickel	2.05E-06	1B	1.43E-05	4.57E-05
Selenium	<MDL	1B	-	-
Polycyclic Organic Matter				
Fluoranthene	2.92E-09	1A	2.04E-08	6.54E-08
Fluorene	2.73E-09	1A	1.90E-08	6.10E-08
2-Methylnaphthalene	2.34E-08	1A	1.63E-07	5.23E-07
Phenanthrene	1.66E-08	1A	1.16E-07	3.70E-07
Pyrene	4.87E-09	1A	3.40E-08	1.09E-07
Total HAP Emissions			**1.28E-02**	**4.11E-02**

References:

1 EPA, Compilation of Air Emissions Factors (5th Edition). Section 1.4, *Natural Gas Combustion* (July 1998). Emission factors provided in units of lb/MMscf converted to lb/MMBtu assuming 1,026 Btu/scf.

A Table 1.4-3 "Emission Factors for Speciated Organic Compounds from Natural Gas Combustion."

B Table 1.4-4 "Emission Factors for Metals from Natural Gas Combustion."

C Table 1.4-2 "Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion."

2 Chromium is divided into Chromium III and Chromium VI based on the EPA augmentation assuming Chromium (III) is 96% of total Chromium and Chromium (VI) is 4% of total Chromium.
https://www.epa.gov/sites/default/files/2017-10/documents/master_module_2017eic_eis_nei_training_module1_final.pdf

3 Pollutants in AP-42 with emissions factors equal to the method detection level were not included in the evaluation.

Georgia-Pacific Corrugated LLC
Olympia Container

TOXIC AIR POLLUTANT EVALUATION

Hazardous Air Pollutants	CAS Number	Project Emissions = [New 22 MMBtu/hr Boiler - Existing 16 MMBtu/hr Boiler]			Washington Administrative Code 173-460 - tBACT Analysis					
		lb/hr	lb/24-hr	tpy	Project TAP Rates By Averaging Period (lb/avg. period)	Averaging Period	De Minimus (lb/avg)	Above De Minimis?	SQER (lb/avg. period)	Above SQER?
Hazardous Air Pollutants										
Benzene	71-43-2	2.86E-05	6.86E-04	1.42E-04	0.28	year	1.00	--	21	--
1,4-Dichlorobenzene	106-46-7	1.63E-05	3.92E-04	8.11E-05	0.16	year	0.74	--	15	--
Formaldehyde	50-00-0	1.02E-03	2.45E-02	5.07E-03	10.14	year	1.4	YES	27	--
n-Hexane	110-54-3	2.45E-02	5.88E-01	1.22E-01	0.59	24-hr	2.6	--	52	--
Naphthalene	91-20-3	8.30E-06	1.99E-04	4.12E-05	8.25E-02	year	0.24	--	4.8	--
Toluene	108-88-3	4.63E-05	1.11E-03	2.30E-04	1.11E-03	24-hr	19	--	370	--
Trace Metals										
Arsenic	7440-38-2	2.72E-06	6.53E-05	1.35E-05	2.70E-02	year	2.50E-03	YES	4.90E-02	--
Cadmium	7440-43-9	1.50E-05	3.59E-04	7.44E-05	0.15	year	1.90E-03	YES	3.90E-02	YES
Chromium (III)	-	1.83E-05	4.39E-04	9.09E-05	4.39E-04	24-hr	1.94E-02	--	3.77E-01	--
Chromium (VI)	-	7.62E-07	1.83E-05	3.79E-06	7.57E-03	year	3.30E-05	YES	6.50E-04	YES
Cobalt	7440-48-4	1.14E-06	2.74E-05	5.68E-06	2.74E-05	24-hr	3.70E-04	--	7.40E-03	--
Lead	7439-92-1	6.81E-06	1.63E-04	3.38E-05	6.76E-02	year	1.00E+01	--	14.00	--
Manganese	7439-96-5	5.17E-06	1.24E-04	2.57E-05	1.24E-04	24-hr	1.10E-03	--	2.20E-02	--
Mercury	7439-97-6	3.54E-06	8.49E-05	1.76E-05	8.49E-05	24-hr	1.10E-04	--	2.20E-03	--
Nickel	7440-02-0	2.86E-05	6.86E-04	1.42E-04	0.28	year	3.10E-02	YES	0.62	--
Selenium	7782-49-2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	24-hr	7.40E-02	--	1.50	--
Polycyclic Organic Matter										
Fluoranthene	206-44-0	4.08E-08	9.80E-07	2.03E-07	Not Applicable					
Fluorene	86-73-7	3.81E-08	9.15E-07	1.89E-07	Not Applicable					
2-Methylnaphthalene	91-57-6	3.27E-07	7.84E-06	1.62E-06	Not Applicable					
Phenanthrene	85-01-8	2.31E-07	5.55E-06	1.15E-06	Not Applicable					
Pyrene	129-00-0	6.81E-08	1.63E-06	3.38E-07	Not Applicable					

APPENDIX C –
ELECTRONIC MODELING FILES

APPENDIX D –
SEPA CHECKLIST

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:

Notice of Construction Application (Project) for Replacement of an existing Natural Gas Fired Boiler with a new Natural Gas Fired Boiler.

2. Name of applicant:

Georgia-Pacific Corrugated LLC (GP) – Olympia WA Facility (Facility)

3. Address and phone number of applicant and contact person:

Kedar Desai, P.E., PMP – Senior Environmental Manager
(562) 458 - 4912
1203 Fones Road SE
Olympia, WA 98501

4. Date checklist prepared:

5/26/2023

5. Agency requesting checklist:

Olympic Region Clean Air Agency (ORCAA)

6. Proposed timing or schedule (including phasing, if applicable):

GP proposes the following timeline:

- *Start of construction: 09/01/23*
- *Completion of construction: 3/15/24*
- *New boiler startup date: 4/5/25*

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The Facility is submitting an Air Quality Notice of Construction (NOC) Application to the ORCAA.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None.

10. List any government approvals or permits that will be needed for your proposal, if known.

The Facility will need an Air Quality NOC Permit for the proposed boiler from ORCAA.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

GP proposes to replace an existing natural gas-fired boiler with a heat input capacity of 16.5 million British thermal units per hour (MMBtu/hr) with a natural gas-fired boiler with a heat input of 22.32 MMBtu/hr. Once the replacement boiler is installed, the existing boiler will be shutdown. The existing Olympia facility is located on approximately 11 acres.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Georgia-Pacific Corrugated LLC
1203 Fones Road SE
Olympia, Thurston County, WA 98501

Please refer to Figure 2-1 in the NOC Permit Application for a site vicinity map.

B. Environmental Elements [HELP]

1. Earth [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

Slope away from the building near pallet storage is about 4%-5%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Gravel

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The area of the new building is approx. 60' x 52' or 3,120 Ft^2

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

No

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

95%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

All drainage of stormwater will be tied into the existing onsite stormwater retention and drainage.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

The Facility proposes to replace an existing boiler with a new, slightly larger boiler. There will be a small increase in emissions as calculated in the NOC application. No change in boiler

maintenance emissions are expected. Construction emissions may include combustion emissions from mobile sources. Emissions may include particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), volatile organic compounds (VOC), carbon dioxide (CO_2), and air toxics from combustion.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Not applicable: There are no off-site sources of emissions or odor that will affect the project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The facility location, in Thurston County, WA is an area of attainment for all pollutants. Therefore, GP is subject to the provisions of ORCAA Rule 6.1.4(a). Furthermore, Rule 6.1.4(a)(2) states that a proposed new stationary source, or modification, must employ best available control technology (BACT) for all air pollutants not previously emitted, or those whose emissions would increase because of the change. BACT is proposed in Section 5 of the NOC application.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

No

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not Applicable

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not Applicable

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater is conveyed through pipes and ditches to a municipal infiltration basin to the west of the Facility. Overflow from the infiltration basin is conveyed west through a drainage ditch to Woodard Creek. The facility discharges indirectly to Woodard Creek, which ultimately flows into Henderson Inlet. Other than storm water, the following authorized non-stormwater runoffs occur from facility operations. 1. Air conditioning condensate (frequency: varies), 2. Annual fire hydrant testing (frequency: annual), and 3. Irrigation (frequency: varies).

2) Could waste materials enter ground or surface waters? If so, generally describe.

No

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

We will tie into the storm water system where applicable.

4. Plants [help]

a. Check the types of vegetation found on the site:

___X_deciduous tree: alder, maple, aspen, other
__X__evergreen tree: fir, cedar, pine, other
_X___shrubs
__X__grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

None, the proposed area is current covered in gravel

b. List threatened and endangered species known to be on or near the site.

None

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

There will be no landscaping as the small addition is only taking up a graveled area. Any landscaping that is damaged will be repaired in kind with what is currently there (no damage to existing landscaping is expected).

e. List all noxious weeds and invasive species known to be on or near the site.

None

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Finch, Crow
Mice, Rats, Rabbit

b. List any threatened and endangered species known to be on or near the site.

None

c. Is the site part of a migration route? If so, explain.

Not to our knowledge

d. Proposed measures to preserve or enhance wildlife, if any:

No, there was no wildlife in the construction area when we observed it.

e. List any invasive animal species known to be on or near the site.

None

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Similar to the existing boiler, the replacement boiler will burn natural gas only. It will be used to produce and supply steam for the production of corrugated containers.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Not applicable: the project does not affect solar energy.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

No energy conservation features are included as part of the proposal.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

1) Describe any known or possible contamination at the site from present or past uses.

None.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

GP does not anticipate storing or using hazardous chemicals in the construction of the proposed boiler. Products of combustion including new source review (NSR) regulated air pollutants and air toxics may result from operation of mobile sources during construction and operation of the proposed natural gas-fired boiler. The Facility's existing natural gas-fired boiler is in compliance with air toxic regulations and GP will continue to comply with applicable air toxic regulations upon operation of the proposed replacement boiler.

4) Describe special emergency services that might be required.

The Facility does not anticipate the need for special emergency services for this project.

5) Proposed measures to reduce or control environmental health hazards, if any:

GP will comply with the requirements of the Washington Administrative Code (WAC) Chapter 173-460: Controls for New Sources of Toxic Air Pollutants. This regulation includes a health impact analysis. The Facility currently operates a natural gas boiler and complies with the applicable regulations. The Facility will continue to comply with this regulation following construction and operation of the replacement boiler.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

There may be a nominal increase in traffic due to construction. The existing boiler will be shutdown so there will be no increase in operation noise levels.

3) Proposed measures to reduce or control noise impacts, if any:

Not applicable: the project will not result in significant noise impacts.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

GP manufactures corrugated containers. Adjacent properties include the Mark Noble Regional Fire Training Center, Platt Electric supply store, and Crown Beverage Packaging. The boiler replacement project will not affect current land use.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Not applicable: the site is used for industrial purposes.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not applicable: the site is used for industrial purposes.

c. Describe any structures on the site.

The site consists of a large building where production and shipping activities occur.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Light Industrial (LI).

f. What is the current comprehensive plan designation of the site?

The Facility is located in Olympia city limits. Olympia has a comprehensive plan that covers the area of the Olympia city limits and the urban growth area.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable: the Facility is not located on shoreline.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

No change, the proposed boiler is replacing an existing boiler of similar size and fuel use.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable: there will be no significant displacement impacts.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Not applicable: the site is an existing facility.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Not applicable: the site is an existing facility.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable: the site is an existing facility and the project does not involve housing.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Not applicable: the site is an existing facility and the project does not involve housing.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable: the site is an existing facility and the project does not involve housing.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed boiler building height will be approximately 25 feet, with a 10 ft boiler stack extending above the roof line. The principle exterior building materials will be similar to current buildings on-site.

b. What views in the immediate vicinity would be altered or obstructed?

None, the proposed building will be comparable to existing structures on site; therefore, no change in views are expected.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable: the site is an existing facility and the project will not affect aesthetics.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None. Construction activities will generally occur during daylight hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Woodland Trail.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Not applicable: the project will not affect recreation.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts,

or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Not applicable: the facility is an existing facility.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Not applicable.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The Facility location is off of Interstate 5 in Olympia, Washington. Public streets in vicinity of the location include 6th St, Pacific Ave, Potamic Ln SE, and Fones Rd SE, the road the Facility is built on. The Project will not affect the existing street system and no additional access is proposed.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

There is a public bus transportation system in the Olympia, Washington area. The nearest bus stop is 0.3 miles away.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Not applicable: no parking spaces will be impacted by the Project.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

There will be no change in vehicle traffic associated with the Project.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Not applicable: the Project will occur within GP's current property boundary.

h. Proposed measures to reduce or control transportation impacts, if any:

Not applicable: there are no significant transportation impacts.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Not applicable: the Project involves replacing an existing boiler with a slightly larger New Boiler.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable: the Project will not impact public services.

16. Utilities [help]

a. Circle utilities currently available at the site:
Utilities include: Electricity, natural gas, water, refuse service, telephone, sanitary sewer

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Not applicable: the project does not propose any new utility usage.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Wade Riley

Position and Agency/Organization Director of Operations

Date Submitted: 7/18/23

D. Supplemental sheet for nonproject actions [HELP]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks,

wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

APPENDIX E –
ORCAA FORMS

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION

TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org).
3. Duty to Correction Application: An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name:
Georgia-Pacific Corrugated LLC - Olympia Container

Mailing Address:
PO Box 547, Olympia, WA 98501

Physical Address of Project or New Source:
1203 Fones Rd SE, Olympia, WA 98501

Billing Address:
PO Box 547, Olympia, WA 98501

For ORCAA use only

File No: 295
County No: 67
Source No: 17
Application No: 23NOC1605

Date Received:
Received
JUL 19 2023
ORCAA

Project or Equipment to be installed/established:

Replacement of an existing 16.5 MMBtu/hr boiler with a new, 20.94 MMBtu/hr boiler.

Anticipated startup date: 09 / 1 / 2023 Is facility currently registered with ORCAA? Yes ☑ No ☐

This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option:

☐ SEPA was satisfied by _____ (government agency) on ___/___/___ (date) - Include a copy of the SEPA determination

☑ SEPA threshold determination by ORCAA (government agency) is pending - Include a copy of the environmental checklist

☐ ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist

☐ This project is exempt from SEPA per _____ (WAC citation).

Name of Owner of Business:
Wade Riley

Title: Director of Operations

Email: Wade.Riley@gapac.com Phone: (360) 412-3552

Authorized Representative for Application (if different than owner):
Kedar Desai, P.E., PMP

Title: Senior Environmental Manager

Email: kedar.desai@gapac.com Phone: (562) 458-4912

I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.

Signature of Owner or Authorized Representative: (sign in Blue Ink)

Date: 7/18/23

IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.

Agency Use Only

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1D- Contact Information

Business Name	**FOR ORCAA USE**
Georgia-Pacific Corrugated LLC - Olympia Container	**FILE #** 295
Physical Site Address (Street address, city, state, zip)	**CTY #** 67
1203 Fones Rd SE, Olympia, WA 98501	**SRC #** 17
	Date Received
Previous Business Name (if applicable)	
N/A	

Contact Information

Inspection Contact	
Name Brandon Pierce	Title EH&S Manager
Phone 360-412-7175	Email Brandon.Pierce@gapac.com
Billing Contact	
Name Brandon Pierce	Title EH&S Manager
Phone 360-412-7175	Email Brandon.Pierce@gapac.com
Emission Inventory Contact	
Name Brandon Pierce	Title EH&S Manager
Phone 360-412-7175	Email Brandon.Pierce@gapac.com
Complaint Contact	
Name Brandon Pierce	Title EH&S Manager
Phone 360-412-7175	Email Brandon.Pierce@gapac.com
Permit Contact	
Name Kedar Desai	Title Senior Environmental Manager
Phone (562) 458-4912	Email kedar.desai@gapac.com

The **inspection contact** is the on-site person responsible for the everyday operation of the site and is available for inspections.
The **billing contact** is the person invoices are sent.
The **emission inventory contact** is the person requests for emissions information and material use information are sent.
The **complaint contact** is the person who receives and responds to complaints received on-site and who is contacted regarding complaints ORCAA receives.
The **permit contact** is the person responsible for filling out permit applications and receiving approval from ORCAA.

FORM 4
FACILITY EMISSIONS SUMMARY

Facility: Georgia-Pacific Corrugated LLC - Olympia Container

Instructions: on back.

Emission Unit ID#	TSP	PM-10	SOx	NOx	VOC	CO
See Appendix B						
Facility Total	See Application, Section 3, Table 3-1					

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility: Georgia-Pacific Corrugated LLC - (**Emission Unit ID#:** Boiler **Page** ___ **of** ___

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
See Appendix B			
Facility Total	See Appendix B		

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 11
BOILERS AND HEATERS

GENERAL INFORMATION

Facility Name: Georgia-Pacific Corrugated LLC - Olympia Container	Contact Person: Kedar Desai Phone Number: (562) 458-4912 Email: kedar.desai@gapac.com
Facility Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check the days when facility operates: M T W Th Fri Sat Sun	Boiler Operating Schedule: 24 hrs/day, 7 days/wk, 52 wks/yr Check days when operating: M T W Th F Sat Sun

Type of Boiler:	Manufacturer:	Model & Serial #s:
Firetube Steam Boiler	Boiler Supply Company, Inc.	CBEX-2W-700-500-250ST
Date of Construction: 9/1/2023	**Date of Installation:** 4/5/2024	**Cost of Modifications:** $547,001.00 (boiler)

TECHNICAL SPECIFICATIONS

Fuel Types: (list all and attach MSDS)	Average Heat Rate MMBtu/hr (HHV)	Design Maximum Heat Rate MMBtu/hr (HHV)
1. Natural gas	1. 20.94	1. 20.94
2.	2.	2.
3.	3.	3.

Heat Transfer Medium:	Temp. (°F):	Pressure (psia)	Flow Rate (specify units)
Water	input output 212	input 170 output	Average Design Maximum

Fire Box	Stack Parameters
Ave. Temperature (°F) _____	Stack Height (ft) 40
Volume of Fire Box (ft^3) _____	Stack Diameter (ft) 2.5
Design Fire Box Gas Velocity (ft/s) _____	Stack Gas Flowrate (ft^3/min): 6677 acfm
Residence Time in Fire Box (sec) _____	At Average Firing Rate 6677 acfm
	At Maximum Firing Rate 6677 acfm
	Stack Temperature (°F): 425

Design Total Supplied Air (scfm) 1 Design % Excess Air (vol) 2023

EMISSIONS DATA

Check all pollution controls proposed and complete the indicated forms:

- ☐ Multiclone (complete Form 31)
- ☐ Wet Scrubber (complete Form 32)
- ☐ Baghouse (complete Form 12)
- ☐ Electrostatic Precipitator (Form 33)
- ☒ NO_x Controls (attach description)
- ☐ Other (attach description)

Pollutant	Maximum Concentrations	Maximum Emission Rates	
		lbs/hr	tpy
Oxides of Nitrogen (NO_x)	ppmv at 3% O_2 9	See Appendix B	See Appendix B
Particulate Emissions	gr/dscf at 7% O_2 N/A	See Appendix B	See Appendix B
Carbon Monoxide (CO)	ppmv at 3% O_2 25	See Appendix B	See Appendix B
Sulfur Dioxide (SO_2)	ppmv at 3% O_2 N/A	See Appendix B	See Appendix B
Volatile Organics (VOCs)	ppmv at 3% O_2 N/A	See Appendix B	See Appendix B

Provide the following information on separate sheets of paper:

1. Description of how fuel quality, temperature, air flowrate, excess air, and other operating variables are controlled.
2. Description of devices used to monitor air pollution controls and emissions.
3. An assembly drawing, dimensioned and to-scale, in plan, elevation and as many sections as needed to clearly show operation of the combustion unit.

See manufacturer specifications attached.

APPENDIX F –
BACT SUPPORTING INFORMATION

Table F-1
RBLC Search Results - NO_x
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
ALLOYS PLANT	AL	10/9/2015	2 CALP LINE BOILERS	NATURAL GAS	24.59	MMBTU/H	Nitrogen Oxides (NOx)	LOW NOX BURNER FLUE GAS RECIRCULATION	30	PPMVD	3% O2
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, VACUUM DEGASSER	NATURAL GAS	51.2	MMBTU/H	Nitrogen Oxides (NOx)	COMBUSTION OF NATURAL GAS AND GOOD	0.035	LB/MMBTU	3 HR
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, PICKLE LINE	NATURAL GAS	67	MMBTU/H	Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILERS SN-26 AND 27, GALVANIZING LINE	NATURAL GAS	24.5	MMBTU/H	Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, VACUUM DEGASSER	NATURAL GAS	88.7	MMBTU/HR	Nitrogen Oxides (NOx)	COMBUSTION OF NATURAL GAS AND GOOD	0.035	LB/MMBTU	3 HR
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, PICKLE LINE	NATURAL GAS	53.7	MMBTU/HR	Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER SN-26, GALVANIZING LINE	NATURAL GAS	53.7	MMBTU/HR	Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, PICKLE LINE	NATURAL GAS	0		Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, ANNEALING PICKLE LINE	NATURAL GAS	0		Nitrogen Oxides (NOx)	Low NOx burners, Combustion of clean fuel,	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILERS SN-26 AND SN-27, GALVANIZING LINE	NATURAL GAS	0		Nitrogen Oxides (NOx)	LOW NOX BURNERS COMBUSTION OF CLEAN	0.035	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-142 Vacuum Degasser Boiler	Natural Gas	50.4	MMBTU/hr	Nitrogen Oxides (NOx)	Low Nox Burners	0.035	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-233 Galvanizing Line Boilers	Natural Gas	15	MMBTU/hr each	Nitrogen Oxides (NOx)	Low Nox Burners	0.1	LB/MMBTU	3-HR
NUCOR STEEL ARKANSAS	AR	9/1/2021	SN-202, 203, 204 Pickle Line Boilers	Natural Gas	0		Nitrogen Oxides (NOx)	Low NOx burners	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Line Boiler	Natural Gas	53.7	MMBtu/hr	Nitrogen Oxides (NOx)	Low NOx burners Combustion of clean fuel	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Galvanizing Line Boilers #1 and #2	Natural Gas	53.7	MMBtu/hr	Nitrogen Oxides (NOx)	Low NOx burners Combustion of clean fuel	0.035	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Galvanizing Line Boiler	Natural Gas	53.7	MMBtu/hr	Nitrogen Oxides (NOx)	Low NOx burners Combustion of clean fuel	0.035	LB/MMBTU	
SHADY HILLS COMBINED CYCLE FACILITY	FL	7/27/2018	60 MMBtu/hour Auxiliary Boiler	Natural Gas	60	MMBtu/hour	Nitrogen Oxides (NOx)	low-NOx burners	0.05	LB/MMBTU	
SHADY HILLS COMBINED CYCLE FACILITY	FL	6/7/2021	60 MMBtu/hour Auxiliary Boiler	Natural Gas	60	MMBtu/hour	Nitrogen Oxides (NOx)	Low-NOx burners	0.05	LB/MMBTU	
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Nitrogen Oxides (NOx)	low NOx burners	0.035	LB/MMBTU	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Vacuum Degasser Boiler (EP 20-13)	Natural Gas	50.4	MMBtu/hr	Nitrogen Oxides (NOx)	The permittee must develop a Good Combustion and	35	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Pickle Line #2 â€" Boiler #1 & #2 (EP 21-04 & EP 21-05)	Natural Gas	18	MMBtu/hr, each	Nitrogen Oxides (NOx)	The permittee must develop a Good Combustion and	50	LB/MMSCF	EACH
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Nitrogen Oxides (NOx)	SCR and LNB	0.01	LB/MMBTU	12-MONTH ROLLING AVERAGE
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Nitrogen Oxides (NOx)	Low-NOx burners and internal flue gas recirculation	0.04	LB/MMBTU	30 DAY ROLL AVG WHEN FIRING NAT. GAS
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Nitrogen Oxides (NOx)	Ultra-low NOX burners, good combustion practices, and	9.74	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Refinery Boiler	Natural Gas	5	MMBTUH	Nitrogen Oxides (NOx)	Good Combustion	0.0075	LB/MMBTU	3-HOUR AVG
TENASKA BROWNSVILLE GENERATING STATION	TX	4/29/2014	boiler	natural gas	90	MMBTU/H	Nitrogen Oxides (NOx)	ultra low-NOx burners, limited use	9	PPMVD	@15% O2
S R BERTRON ELECTRIC GENERATING STATION	TX	12/19/2014	boiler	natural gas	80	MMBTU/H	Nitrogen Oxides (NOx)	low-NOx burners	0.036	LB/MMBTU	3-HR ROLLING
EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (<100 MMBtu) â€"	natural gas	73.3	MMBTU/H	Nitrogen Dioxide (NO2)		0.01	MMBTU/H	ROLLING 3-HR AVERAGE
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Nitrogen Oxides (NOx)	Low NOx burners	0.036	LB/MMBTU	

Table F-1
RBLC Search Results - NO_x
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Nitrogen Oxides (NOx)	Low NOx burners and flue gas recirculation	0.011	LB/MMBTU	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Nitrogen Oxides (NOx)		0.1	LB/MMBTU	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Nitrogen Oxides (NOx)	Ultra-low NOx Burners, Flue Gas Recirculation and Good	0.0105	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas Fired Boilers	Natural Gas	28	mmBTU	Nitrogen Oxides (NOx)	Ultra-Low NOx Burners, Flue Gas Recirculation, and Good	0.0105	LB/MMBTU	1-HOUR AVERAGE

Table F-2
RBLC Search Results - CO
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
ALLOYS PLANT	AL	10/9/2015	2 CALP LINE BOILERS	NATURAL GAS	24.59	MMBTU/H	Carbon Monoxide	GCP	0.08	LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, VACUUM DEGASSER	NATURAL GAS	51.2	MMBTU/H	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, PICKLE LINE	NATURAL GAS	67	MMBTU/H	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILERS SN-26 AND 27, GALVANIZING LINE	NATURAL GAS	24.5	MMBTU/H	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, VACUUM DEGASSER	NATURAL GAS	88.7	MMBTU/HR	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, PICKLE LINE	NATURAL GAS	53.7	MMBTU/HR	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER SN-26, GALVANIZING LINE	NATURAL GAS	53.7	MMBTU/HR	Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, PICKLE LINE	NATURAL GAS	0		Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, ANNEALING PICKLE LINE	NATURAL GAS	0		Carbon Monoxide	Combustion of Natural gas and Good Combustion	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILERS SN-26 AND SN-27, GALVANIZING LINE	NATURAL GAS	0		Carbon Monoxide	COMBUSTION OF NATURAL GAS AND GOOD	0.0824	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-142 Vacuum Degasser Boiler	Natural Gas	50.4	MMBTU/hr	Carbon Monoxide	Good combustion practices	0.075	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-233 Galvanizing Line Boilers	Natural Gas	15	MMBTU/hr each	Carbon Monoxide	Good combustion practices	0.084	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	9/1/2021	SN-202, 203, 204 Pickle Line Boilers	Natural Gas	0		Carbon Monoxide	Good Combustion Practice	0.084	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Line Boiler	Natural Gas	53.7	MMBtu/hr	Carbon Monoxide	Combustion of Natural gas and Good Combustion	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Galvanizing Line Boilers #1 and #2	Natural Gas	53.7	MMBtu/hr	Carbon Monoxide	Combustion of Natural gas and Good Combustion	0.0824	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Galvanizing Line Boiler	Natural Gas	53.7	MMBtu/hr	Carbon Monoxide	Combustion of Natural gas and Good Combustion	0.0824	LB/MMBTU	
CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN	IA	7/12/2013	Boilers	natural gas	456	MMBTU/H	Carbon Monoxide	oxidation catalyst	0.0013	LB/MMBTU	AVERAGE OF THREE (3) STACK TESTS
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Carbon Monoxide	good combustion practices	61	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Vacuum Degasser Boiler (EP 20-13)	Natural Gas	50.4	MMBtu/hr	Carbon Monoxide	The permittee must develop a Good Combustion and	61	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Pickle Line #2 â€" Boiler #1 & #2 (EP 21-04 & EP	Natural Gas	18	MMBtu/hr, each	Carbon Monoxide	The permittee must develop a Good Combustion and	84	LB/MMSCF	EACH
DONALDSONVILLE NITROGEN COMPLEX	LA	7/15/2013	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-	Natural Gas	612.4	MM Btu/hr	Carbon Monoxide	Good combustion practices; proper equipment design;	24.5	LB/HR	HOURLY MAXIMUM
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Carbon Monoxide	Good combustion practices and compliance with the	0.037	LB/MMBTU	
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Carbon Monoxide	Good combustion control practices.	0.05	LB/MMBTU	HOURLY, WHEN FIRING NATURAL GAS
EMBERCLEAR GTL MS	MS	5/8/2014	Boiler, Nat Gas Fired	NATURAL GAS	261	MMBTU/H	Carbon Monoxide	CO Catalytic Oxidation	5	PPMV @ 3% O2	3-HR ROLLING AVG
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Carbon Monoxide	Good combustion practices and the use of natural gas	33	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Gas-fired Boiler	Natural Gas	95	MMBTUH	Carbon Monoxide	Economizer, Insulation, O2 train control, Energy	146	LB CO2/1000 LB STEAM	30-DAY AVG
SEMINOLE GNRTNG STA	OK	5/5/2015	NATURAL GAS-FIRED BOILER (>250MMBTUH)	NATURAL GAS	16456	MMBTUH	Carbon Monoxide	NO CONTROLS FEASIBLE;GOOD	0.465	LB/MMBTU	30-DAY ROLLING AVERAGE
SEMINOLE GNRTNG STA	OK	5/5/2015	NATURAL GAS-FIRED BOILER (<100MMBTUH)	NATURAL GAS	40.4	MMBTUH	Carbon Monoxide	NO CONTROLS FEASIBLE;GOOD	0.0075	LB/MMBTU	3-HOUR AVERAGE (TEST)
CANFOR SOUTHERN PINE - CONWAY MILL	SC	5/21/2019	Boiler No. 2	Natural Gas	0		Carbon Monoxide	Work Practice Standards	0.0375	LB/MMBTU	

Table F-2
RBLC Search Results - CO
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
S R BERTRON ELECTRIC GENERATING STATION	TX	12/19/2014	boiler	natural gas	80	MMBTU/H	Carbon Monoxide	low-NOx burners	0.037	LB/MMBTU	3-HR ROLLING AVERAGE
EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (<100 MMBtu) â€“	natural gas	73.3	MMBTU/H	Carbon Monoxide		50	PPM	ROLLING 3-HR AVERAGE
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Carbon Monoxide	Good combustion practice to ensure complete	50	PPMVD @ 3% O2	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Carbon Monoxide	Good combustion practice to ensure complete	50	PPMVD @ 3% O2	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Carbon Monoxide	Good combustion practice to ensure complete	50	PPMVD @ 3% O2	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Carbon Monoxide	Ultra-low NOx Burners, Flue Gas Recirculation and Good	25	PPMVD	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Carbon Monoxide	Ultra-Low NOx Burners, Flue Gas Recirculation, and Good	25	PPMVD	

Table F-3
RBLC Search Results - VOC
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
LENZING FIBERS, INC.	AL	1/22/2014	Natural Gas Fired Boilers (3)	Natural Gas	100	mm btu/hr	Volatile Organic Compounds (VOC)	Good combustion Practices.	0.0054	LB/MMBTU	
ALLOYS PLANT	AL	10/9/2015	2 CALP LINE BOILERS	NATURAL GAS	24.59	MMBTU/H	Volatile Organic Compounds (VOC)	GCP	0.006	LB/MMBTU	
BELK CHIP-N-SAW FACILITY	AL	5/26/2016	60 MMBTU/HR NATURAL GAS-FIRED BOILER (ES-008)	NATURAL GAS	60	MMBTU/H	Volatile Organic Compounds (VOC)	GOOD COMBUSTION PRACTICES	0.0054	LB/MMBTU INPUT	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, VACUUM DEGASSER	NATURAL GAS	51.2	MMBTU/H	Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILERS SN-26 AND 27, GALVANIZING LINE	NATURAL GAS	24.5	MMBTU/H	Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, VACUUM DEGASSER	NATURAL GAS	88.7	MMBTU/HR	Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, PICKLE LINE	NATURAL GAS	53.7	MMBTU/HR	Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER SN-26, GALVANIZING LINE	NATURAL GAS	53.7	MMBTU/HR	Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, PICKLE LINE	NATURAL GAS	0		Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, ANNEALING PICKLE LINE	NATURAL GAS	0		Volatile Organic Compounds (VOC)	Combustion of Natural gas and Good Combustion	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILERS SN-26 AND SN-27, GALVANIZING LINE	NATURAL GAS	0		Volatile Organic Compounds (VOC)	COMBUSTION OF NATURAL GAS AND GOOD	0.0054	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-142 Vacuum Degasser Boiler	Natural Gas	50.4	MMBTU/hr	Volatile Organic Compounds (VOC)	Good combustion practices	0.0026	LB/HR	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-233 Galvanizing Line Boilers	Natural Gas	15	MMBTU/hr each	Volatile Organic Compounds (VOC)	Good combustion practices	0.0055	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	9/1/2021	SN-202, 203, 204 Pickle Line Boilers	Natural Gas	0		Volatile Organic Compounds (VOC)	Good Combustion Practice	0.0055	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Line Boiler	Natural Gas	53.7	MMBtu/hr	Volatile Organic Compounds (VOC)	Combustion of Natural gas and Good Combustion	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Galvanizing Line Boilers #1 and #2	Natural Gas	53.7	MMBtu/hr	Volatile Organic Compounds (VOC)	Combustion of Natural gas and Good Combustion	0.0054	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Galvanizing Line Boiler	Natural Gas	53.7	MMBtu/hr	Volatile Organic Compounds (VOC)	Combustion of Natural gas and Good Combustion	0.0054	LB/MMBTU	
CF INDUSTRIES NITROGEN, LLC PORT NEAL NITROGEN	IA	7/12/2013	Boilers	natural gas	456	MMBTU/H	Volatile Organic Compounds (VOC)	good operating practices and use of natural gas	0.0014	LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Volatile Organic Compounds (VOC)	good combustion practices and natural gas fuel (clean	0.0054	LB/MMBTU	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Vacuum Degasser Boiler (EP 20-13)	Natural Gas	50.4	MMBtu/hr	Volatile Organic Compounds (VOC)	The permittee must develop a Good Combustion and	5.5	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Pickle Line #2 â€" Boiler #1 & #2 (EP 21-04 & EP	Natural Gas	18	MMBtu/hr, each	Volatile Organic Compounds (VOC)	The permittee must develop a Good Combustion and	5.5	LB/MMSCF	EACH
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Volatile Organic Compounds (VOC)	Good combustion practices and compliance with the	0.0055	LB/MMBTU	
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices	1.6	LB/H	HOURLY
THOMAS TOWNSHIP ENERGY, LLC	MI	8/21/2019	FGAUXBOILER	Natural gas	80	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices.	0.0054	LB/MMBTU	HOURLY; EACH BOILER
EMBERCLEAR GTL MS	MS	5/8/2014	Boiler, Nat Gas Fired	NATURAL GAS	261	MMBTU/H	Volatile Organic Compounds (VOC)		0		
NORFOLK CRUSH, LLC	NE	11/21/2022	Boiler A	Natural Gas	84	MMBtu/hr	Volatile Organic Compounds (VOC)		0.52	LB/HR	THREE 1-HOUR TESTS / TEST METHOD AVERAGE
NORFOLK CRUSH, LLC	NE	11/21/2022	Boiler B	Natural Gas	84	MMBtu/hr	Volatile Organic Compounds (VOC)		0.52	LB/HR	THREE 1-HOUR TESTS / TEST METHOD AVERAGE
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practices and the use of natural gas	4.86	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Gas-fired Boiler	Natural Gas	95	MMBTUH	Volatile Organic Compounds (VOC)	Good Combustion	0.006	LB/MMBTU	3-HOUR

Table F-3
RBLC Search Results - VOC
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Refinery Boiler	Natural Gas	5	MMBTUH	Volatile Organic Compounds (VOC)	Good Combustion	0.0054	LB/MMBTU	3-HOUR AVG
MIDWEST CITY AIR DEPOT	OK	1/8/2015	Heaters/Boilers	Natural Gas	0	MMBTUH	Volatile Organic Compounds (VOC)	1. Use pipeline-quality natural gas.	7.1	TONS PER YEAR	TOTAL FOR ALL UNITS.
CANFOR SOUTHERN PINE - CONWAY MILL	SC	5/21/2019	Boiler No. 2	Natural Gas	0		Volatile Organic Compounds (VOC)	Work Practice Standards	0.0054	LB/MMBTU	
MERCEDES BENZ VANS, LLC	SC	4/15/2016	Energy Center Boilers	Natural Gas	14.27	MMBTU/hr	Volatile Organic Compounds (VOC)	Annual tune ups per 40 CFR 63.7540(a)(10) are required.	5.5	LB/MMSCF	3 HOUR BLOCK AVERAGE
EAGLE MOUNTAIN STEAM ELECTRIC STATION	TX	6/18/2015	Commercial/Institutional Size Boilers (<100 MMBtu) â€"	natural gas	73.3	MMBTU/H	Volatile Organic Compounds (VOC)		4	PPM	1-HR AVG
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practice to ensure complete	0.94	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practice to ensure complete	5.42	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Volatile Organic Compounds (VOC)	Good combustion practice to ensure complete	0.3	T/YR	
ODESSA PETROCHEMICAL PLANT	TX	11/22/2016	Boilers	natural gas	223	MMBTU/H	Volatile Organic Compounds (VOC)	Best combustion practices	0.0005	LB/MMBTU	
ODESSA PETROCHEMICAL PLANT	TX	11/22/2016	small Boiler	natural gas	39.9	MMBtu/hr	Volatile Organic Compounds (VOC)	best combustion practices	0.0005	MMBTU/HR	
PERDUE GRAIN AND OILSEED, LLC	VA	7/12/2017	(4) 27 MMBtu/hr boilers, Natural gas and No. 2 fuel oi	Natural Gas	0		Volatile Organic Compounds (VOC)		0.1	LB/HR	
GREEN BAY PACKAGING, INC. - SHIPPING CONTAINER	WI	9/6/2018	Natural gas-fied boiler (Boiler B01)	Natural Gas	35	mmBtu/hr	Volatile Organic Compounds (VOC)	Good combustion practices, use only natural gas, equip	0.0055	LB/MMBTU	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Volatile Organic Compounds (VOC)	Ultra-low NOx Burners, Flue Gas Recirculation and Good	0.0036	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Volatile Organic Compounds (VOC)	Ultra-Low NOx Burners, Flue Gas Recirculation, and Good	0.0036	LB/MMBTU	

Table F-4
RBLC Search Results - PM, PM_{10}, $PM_{2.5}$, and Metals
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
LENZING FIBERS, INC.	AL	1/22/2014	Natural Gas Fired Boilers (3)	Natural Gas	100	mm btu/hr	Particulate matter, filterable	Good combustion Practices.	0.0075		
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, VACUUM DEGASSER	NATURAL GAS	51.2	MMBTU/H	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	5.2	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, PICKLE LINE	NATURAL GAS	67	MMBTU/H	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	5.2	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILERS SN-26 AND 27, GALVANIZING LINE	NATURAL GAS	24.5	MMBTU/H	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	5.2	X10^-4 GR/DSCF	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, VACUUM DEGASSER	NATURAL GAS	88.7	MMBTU/HR	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	9.38	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, PICKLE LINE	NATURAL GAS	53.7	MMBTU/HR	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	0.0019	LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER SN-26, GALVANIZING LINE	NATURAL GAS	53.7	MMBTU/HR	Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	6.8	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, PICKLE LINE	NATURAL GAS	0		Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	0.0019	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, ANNEALING PICKLE LINE	NATURAL GAS	0		Particulate matter, filterable (FPM)	Combustion of Natural gas and Good Combustion	0.0019	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILERS SN-26 AND SN-27, GALVANIZING LINE	NATURAL GAS	0		Particulate matter, filterable (FPM)	COMBUSTION OF NATURAL GAS AND GOOD	0.0007	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-142 Vacuum Degasser Boiler	Natural Gas	50.4	MMBTU/hr	Particulate matter, filterable (FPM)	Good combustion practices	0.0019	LB/MMBTU	3-HR
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-233 Galvanizing Line Boilers	Natural Gas	15	MMBTU/hr each	Particulate matter, filterable (FPM)	Good combustion practices	0.0019	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	9/1/2021	SN-202, 203, 204 Pickle Line Boilers	Natural Gas	0		Particulate matter, filterable (FPM)	Good Combustion Practice	0.0019	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Line Boiler	Natural Gas	53.7	MMBtu/hr	Particulate matter, filterable (FPM)	Combustion of Natural gas and Good Combustion	0.0019	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Galvanizing Line Boilers #1 and #2	Natural Gas	53.7	MMBtu/hr	Particulate matter, filterable (FPM)	Combustion of Natural gas and Good Combustion	0.0007	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Galvanizing Line Boiler	Natural Gas	53.7	MMBtu/hr	Particulate matter, filterable (FPM)	Combustion of Natural gas and Good Combustion	0.0012	LB/MMBTU	
CF INDUSTRIES NITROGEN, LLC PORT NEAL NITROGEN	IA	7/12/2013	Boilers	natural gas	456	MMBTU/H	Particulate matter, total 10	good operating practices and use of natural gas	0.0024	LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS
CF INDUSTRIES NITROGEN, LLC PORT NEAL NITROGEN	IA	7/12/2013	Boilers	natural gas	456	MMBTU/H	Particulate matter, total 2.5	good operating practices and use of natural gas	0.0024	LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS
CF INDUSTRIES NITROGEN, LLC PORT NEAL NITROGEN	IA	7/12/2013	Boilers	natural gas	456	MMBTU/H	Particulate matter, total	good operating practices and use of natural gas	0.0024	LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS
SHELL ROCK SOY PROCESSING	IA	3/17/2021	Natural Gas Boiler A	natural gas	82	MMBtu/hr	Particulate matter, total	Low NOx Burner and Flue Gas Recirculation	0.026	LB/HR	PM, PM10 AND PM2.5
SHELL ROCK SOY PROCESSING	IA	3/17/2021	Natural Gas Boiler B	natural gas	82	MMBtu/hr	Particulate matter, total	Low NOx Burner and Flue Gas Recirculation	0.26	LB/HR	PM, PM10 AND PM2.5
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Particulate matter, total 10	good combustion practices and only pipeline quality	0.0007	LB/MMBTU	
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Particulate matter, filterable	good combustion practices and only pipeline quality	0.0007	LB/MMBTU	
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Particulate matter, total 2.5	good combustion practices and only pipeline quality	0.0007	LB/MMBTU	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Vacuum Degasser Boiler (EP 20-13)	Natural Gas	50.4	MMBtu/hr	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and	1.9	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Pickle Line #2 â€" Boiler #1 & #2 (EP 21-04 & EP	Natural Gas	18	MMBtu/hr, each	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and	1.9	LB/MMSCF	EACH
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Particulate matter, total 10	Use of pipeline quality natural gas or fuel gas and	6.81	LB/H	
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Particulate matter, total 2.5	Use of pipeline quality natural gas or fuel gas and	6.81	LB/H	
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Particulate matter, filterable	Good combustion practices.	0.8	LB/H	HOURLY WHEN FIRING NATURAL GAS

Table F-4
RBLC Search Results - PM, PM_{10}, $PM_{2.5}$, and Metals
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Particulate matter, total 10	Good combustion practices	2.3	LB/H	HOURLY WHEN FIRING NATURAL GAS
MICHIGAN STATE UNIVERSITY	MI	5/22/2019	EUSTMBOILER	natural gas	300	MMBTU/H	Particulate matter, total 2.5	Good combustion practices	2.3	LB/H	HOURLY WHEN FIRING NATURAL GAS
THOMAS TOWNSHIP ENERGY, LLC	MI	8/21/2019	FGAUXBOILER	Natural gas	80	MMBTU/H	Particulate matter, total (TPM)	Low sulfur fuel (natural gas) and good combustion	1.9	LB/MMSCF	HOURLY; EACH BOILER
EMBERCLEAR GTL MS	MS	5/8/2014	Boiler, Nat Gas Fired	NATURAL GAS	261	MMBTU/H	Particulate matter, total		1.31	LB/H	3-HR AVERAGE
EMBERCLEAR GTL MS	MS	5/8/2014	Boiler, Nat Gas Fired	NATURAL GAS	261	MMBTU/H	Particulate matter, total 10		1.31	LB/H	3-HR AVERAGE
EMBERCLEAR GTL MS	MS	5/8/2014	Boiler, Nat Gas Fired	NATURAL GAS	261	MMBTU/H	Particulate matter, total 2.5		1.31	LB/H	3-HR AVERAGE
NORFOLK CRUSH, LLC	NE	11/21/2022	Boiler A	Natural Gas	84	MMBtu/hr	Particulate matter, total 10		0.26	LB/HR	THREE 1-HOUR TESTS / TEST METHOD AVERAGE
NORFOLK CRUSH, LLC	NE	11/21/2022	Boiler B	Natural Gas	84	MMBtu/hr	Particulate matter, total 10		0.26	LB/HR	THREE 1-HOUR TESTS / TEST METHOD AVERAGE
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Particulate matter, filterable	Good combustion practices and the use of natural gas	1.68	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Particulate matter, total 10	Good combustion practices and the use of natural gas	0.46	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
INTEL OHIO SITE	OH	9/20/2022	29.4 MMBtu/hr Natural Gas-Fired Boilers: B001 through	Natural gas	29.4	MMBTU/H	Particulate matter, total 2.5	Good combustion practices and the use of natural gas	0.38	T/YR	PER ROLLING 12 MONTH PERIOD B001 TO B014
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Gas-fired Boiler	Natural Gas	95	MMBTUH	Particulate matter, total 10	Good Combustion	0.013	LB/MMBTU	3-HOUR AVG
NORTHSTAR AGRI IND ENID	OK	7/31/2013	Gas-fired Boiler	Natural Gas	95	MMBTUH	Particulate matter, total 2.5	Good Combustion	0.0126	LB/MMBTU	
MERCEDES BENZ VANS, LLC	SC	4/15/2016	Energy Center Boilers	Natural Gas	14.27	MMBTU/hr	Particulate matter, total (TPM)	Annual tune ups per 40 CFR 63.7540(a)(10) are required.	7.6	LB/MMSCF	3 HR BLOCK AVERAGE
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Particulate matter, total 10	Good combustion practice to ensure complete	1.31	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Particulate matter, total 2.5	Good combustion practice to ensure complete	1.31	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Particulate matter, total 2.5	Use of gaseous fuel with efficient combustion.	7.49	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Particulate matter, total 10	Use of gaseous fuel with efficient combustion.	7.49	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Particulate matter, total 10	Good combustion practice to ensure complete	0.4	T/YR	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Particulate matter, total 2.5	Good combustion practice to ensure complete	4	T/YR	
NORFOLK NAVAL SHIPYARD	VA	12/9/2020	Three (3) boilers	Natural Gas	76.6	MMBtu/hr	Particulate matter, total 10		0.0078	LB	MMBTU
NORFOLK NAVAL SHIPYARD	VA	12/9/2020	Three (3) boilers	Natural Gas	76.6	MMBtu/hr	Particulate matter, total 2.5		0.0078	LB	MMBTU
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Particulate matter, total	Good Combustion Practices	0.0075	LB/MMBTU	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Particulate matter, total 10	Good Combustion Practices	0.0075	LB/MMBTU	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Particulate matter, total 2.5	Good Combustion Practices	0.0075	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Particulate matter, total	Good Combustion Practices and The Use of Pipeline	0.0075	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Particulate matter, total 10	Good Combustion Practices and The Use of Pipeline	0.0075	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Particulate matter, total 2.5	Good Combustion Practices and The Use of Pipeline	0.0075	LB/MMBTU	
MOCKINGBIRD HILL COMPRESSOR STATION	WV	6/14/2018	WH-1 - Boiler	Natural Gas	8.72	mmBtu/hr	Particulate matter, total 2.5	Limited to natural gas	0		

Table F-4
RBLC Search Results - PM, PM_{10}, $PM_{2.5}$, and Metals
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
MOCKINGBIRD HILL COMPRESSOR STATION	WV	6/14/2018	WH-1 - Boiler	Natural Gas	8.72	mmBtu/hr	Particulate matter, total 10	Limited to natural gas	0		
MOCKINGBIRD HILL COMPRESSOR STATION	WV	6/14/2018	WH-1 - Boiler	Natural Gas	8.72	mmBtu/hr	Particulate matter, total	Limited to natural gas.	0		

Table F-5
RBLC Search Results - SO_2
Georgia Pacific Corrugated LLC - Olympia Container

Facility Name	Facility State	Permit Issuance	Process Name	Primary Fuel	Throughput	Unit of Measurement	Pollutant	Control Method Description	Emissions Limit	Unit of Measurement	Emissions Limit Averaging Time Condition
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, VACUUM DEGASSER	NATURAL GAS	51.2	MMBTU/H	Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	5.88	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILER, PICKLE LINE	NATURAL GAS	67	MMBTU/H	Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	5.88	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	9/18/2013	BOILERS SN-26 AND 27, GALVANIZING LINE	NATURAL GAS	24.5	MMBTU/H	Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	5.88	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	11/7/2018	BOILER, VACUUM DEGASSER	NATURAL GAS	88.7	MMBTU/HR	Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	5.88	X10^-4 LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, PICKLE LINE	NATURAL GAS	0		Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	0.0006	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILER, ANNEALING PICKLE LINE	NATURAL GAS	0		Sulfur Dioxide (SO2)	Combustion of Natural gas and Good Combustion	0.0006	LB/MMBTU	
BIG RIVER STEEL LLC	AR	4/5/2019	BOILERS SN-26 AND SN-27, GALVANIZING LINE	NATURAL GAS	0		Sulfur Dioxide (SO2)	COMBUSTION OF NATURAL GAS AND GOOD	0.0006	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-142 Vacuum Degasser Boiler	Natural Gas	50.4	MMBTU/hr	Sulfur Dioxide (SO2)	Good combustion practices	0.0006	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	2/14/2019	SN-233 Galvanizing Line Boilers	Natural Gas	15	MMBTU/hr each	Sulfur Dioxide (SO2)	Good combustion practices	0.0006	LB/MMBTU	
NUCOR STEEL ARKANSAS	AR	9/1/2021	SN-202, 203, 204 Pickle Line Boilers	Natural Gas	0		Sulfur Dioxide (SO2)	Low Sulfur fuels	0.0006	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Line Boiler	Natural Gas	53.7	MMBtu/hr	Sulfur Dioxide (SO2)	Combustion of Natural gas and Good Combustion	0.0006	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Galvanizing Line Boilers #1 and #2	Natural Gas	53.7	MMBtu/hr	Sulfur Dioxide (SO2)	Combustion of Natural gas and Good Combustion	0.0006	LB/MMBTU	
BIG RIVER STEEL LLC	AR	1/31/2022	Pickle Galvanizing Line Boiler	Natural Gas	53.7	MMBtu/hr	Sulfur Dioxide (SO2)	Combustion of Natural gas and Good Combustion	0.0006	LB/MMBTU	
NUCOR STEEL	IN	3/30/2023	Boiler (CC-BOIL)	natural gas	50	MMBtu/hr	Sulfur Dioxide (SO2)	good combustion practices and only pipeline quality	0.0006	LB/MMBTU	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Vacuum Degasser Boiler (EP 20-13)	Natural Gas	50.4	MMBtu/hr	Sulfur Dioxide (SO2)	The permittee must develop a Good Combustion and	0.6	LB/MMSCF	
NUCOR STEEL GALLATIN, LLC	KY	4/19/2021	Pickle Line #2 â€" Boiler #1 & #2 (EP 21-04 & EP	Natural Gas	18	MMBtu/hr, each	Sulfur Dioxide (SO2)	The permittee must develop a Good Combustion and	0.6	LB/MMSCF	EACH
FG LA COMPLEX	LA	1/6/2020	Boilers	Natural Gas	1200	mm btu/h	Sulfur Dioxide (SO2)	Use of pipeline quality natural gas or fuel gas	0.69	LB/H	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	40	MMBTU/H	Sulfur Dioxide (SO2)	Good combustion practice to ensure complete	5	GR/100 SCF	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	95.7	MMBTU/H	Sulfur Dioxide (SO2)	Fuel total sulfur content will be less than or equal to 5	5	GR/100 SCF	
PORT OF BEAUMONT PETROLEUM TRANSLOAD	TX	11/6/2015	Commercial/Institutional-Size Boilers/Furnaces	natural gas	13.2	MMBTU/H	Sulfur Dioxide (SO2)	Good combustion practice to ensure complete	5	GR/100 SCF	
AFE, INC. â€"LCM PLANT	WI	4/24/2018	B01-B12, Boilers	Natural Gas	28	mmBTU/hr	Sulfur Dioxide (SO2)	Good Combustion Practices and the Use of Pipeline	0.0006	LB/MMBTU	
SIO INTERNATIONAL WISCONSIN, INC. -ENERGY	WI	4/24/2018	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Natural Gas	28	mmBTU	Sulfur Dioxide (SO2)	Good Combustion Practices and The Use of Pipeline	0.0006	LB/MMBTU	

Table F-6
CARB Search Results - CO
Georgia Pacific Corrugated LLC - Olympia Container

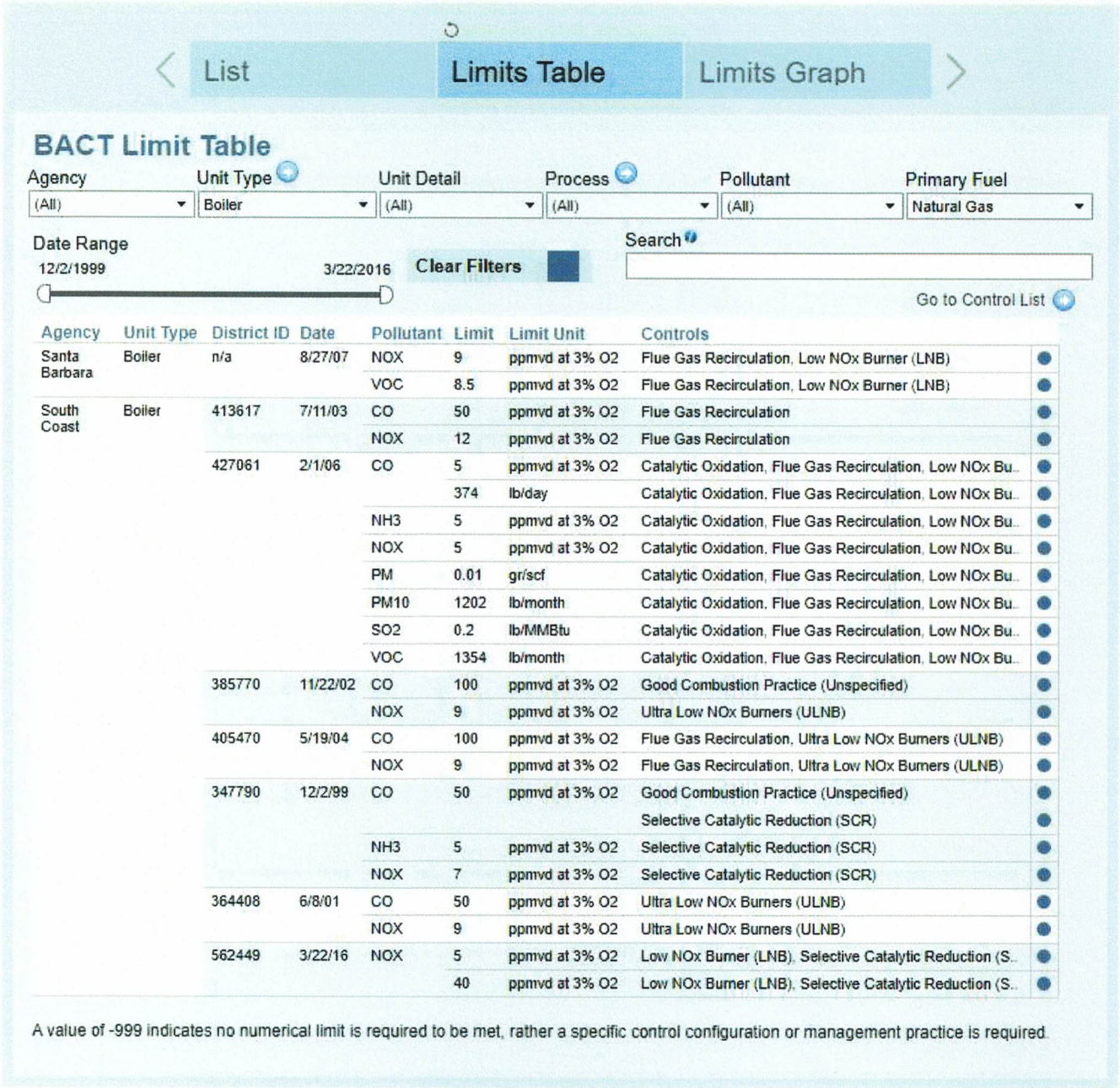
Agency	Unit Type	Heat Input	Heat Input Unit	District ID	Date	Pollutant	Limit	Limit Unit	Controls
Santa Barbara	Boiler	24.49	MMBtu/hr	N/A	5/16/2006	CO	50	ppmvd @ 3% O2	Low NOx Burner
Santa Barbara	Boiler	3	MMBtu/hr	N/A	6/7/2011	CO	100	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	7	MMBtu/hr	N/A	9/27/2006	CO	50	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	10	MMBtu/hr	413617	7/11/2003	CO	50	ppmvd @ 3% O2	Flue Gas Recirculation
South Coast	Boiler	2,088	MMBtu/hr	427061	2/1/2006	CO	5	ppmvd @ 3% O2	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	2,088	MMBtu/hr	427061	2/1/2006	CO	374	lb/day	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	21.46	MMBtu/hr	385770	11/22/2002	CO	100	ppmvd @ 3% O2	Good Combustion Practice (unspecified)
South Coast	Boiler	39	MMBtu/hr	405470	5/19/2004	CO	100	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	39	MMBtu/hr	347790	12/2/1999	CO	50	ppmvd @ 3% O2	Good Combustion Practice (unspecified), Selective Catalytic Reduction
South Coast	Boiler	28.8	MMBtu/hr	364408	6/8/2001	CO	50	ppmvd @ 3% O2	Ultra Low NOx Burners

Table F-7
CARB Search Results - NO_X
Georgia Pacific Corrugated LLC - Olympia Container

Agency	Unit Type	Heat Input	Heat Input Unit	District ID	Date	Pollutant	Limit	Limit Unit	Controls
Santa Barbara	Boiler	26.5	MMBtu/hr	N/A	1/13/2006	NOx	14	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	25	MMBtu/hr	N/A	1/24/2012	NOx	7	ppmvd @ 3% O2	Air to Fuel Ratio, Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	24.49	MMBtu/hr	N/A	5/16/2006	NOx	9	ppmvd @ 3% O2	Fuel Selection (Natural Gas), Low NOx Burner
Santa Barbara	Boiler	24.49	MMBtu/hr	N/A	5/16/2006	NOx	40	ppmvd @ 3% O2	Fuel Selection (Amber Fuel), Low NOx Burner
Santa Barbara	Boiler	62.5	MMBtu/hr	N/A	6/5/2007	NOx	9	ppmvd @ 3% O2	Air to Fuel Ratio, Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	3	MMBtu/hr	N/A	6/7/2011	NOx	12	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	7	MMBtu/hr	N/A	9/27/2006	NOx	12	ppmvd @ 3% O2	Fuel
Santa Barbara	Boiler	7	MMBtu/hr	N/A	9/27/2006	NOx	40	ppmvd @ 3% O2	Fuel
Santa Barbara	Boiler	85	MMBtu/hr	N/A	10/2/2012	NOx	7	ppmvd @ 3% O2	Air to Fuel Ratio, Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	23	MMBtu/hr	N/A	8/27/2007	NOx	9	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
Santa Barbara	Boiler	25	MMBtu/hr	N/A	1/24/2012	NOx	20	ppmvd @ 3% O2	Low NOx Burner
South Coast	Boiler	10	MMBtu/hr	413617	7/11/2003	NOx	12	ppmvd @ 3% O2	Flue Gas Recirculation
South Coast	Boiler	2,088	MMBtu/hr	427061	2/1/2006	NOx	5	ppmvd @ 3% O2	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	21.46	MMBtu/hr	385770	11/22/2002	NOx	9	ppmvd @ 3% O3	Ultra Low NOx Burners
South Coast	Boiler	39	MMBtu/hr	405470	5/19/2004	NOx	9	ppmvd @ 3% O2	Flue Gas Recirculation, Low NOx Burner
South Coast	Boiler	24.2 - 33.9	MMBtu/hr	347790	12/2/1999	NOx	7	ppmvd @ 3% O2	Selective Catalytic Reduction
South Coast	Boiler	28.8	MMBtu/hr	364408	6/8/2001	NOx	9	ppmvd @ 3% O2	Ultra Low NOx Burners
South Coast	Boiler	39.9	MMBtu/hr	562449	3/22/2016	NOx	5	ppmvd @ 3% O2	Low NOx Burner, Selective Catalytic Reduction
South Coast	Boiler	39.9	MMBtu/hr	562449	3/22/2016	NOx	40	ppmvd @ 3% O2	Low NOx Burner, Selective Catalytic Reduction

Table F-8

CARB Clearinghouse Limits Table



List | Limits Table | Limits Graph

BACT Limit Table

Agency: (All) | Unit Type: Boiler | Unit Detail: (All) | Process: (All) | Pollutant: (All) | Primary Fuel: Natural Gas

Date Range: 12/2/1999 – 3/22/2016 | Clear Filters | Search | Go to Control List

Agency	Unit Type	District ID	Date	Pollutant	Limit	Limit Unit	Controls
Santa Barbara	Boiler	n/a	8/27/07	NOX	9	ppmvd at 3% O2	Flue Gas Recirculation, Low NOx Burner (LNB)
				VOC	8.5	ppmvd at 3% O2	Flue Gas Recirculation, Low NOx Burner (LNB)
South Coast	Boiler	413617	7/11/03	CO	50	ppmvd at 3% O2	Flue Gas Recirculation
				NOX	12	ppmvd at 3% O2	Flue Gas Recirculation
		427061	2/1/06	CO	5	ppmvd at 3% O2	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
					374	lb/day	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				NH3	5	ppmvd at 3% O2	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				NOX	5	ppmvd at 3% O2	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				PM	0.01	gr/scf	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				PM10	1202	lb/month	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				SO2	0.2	lb/MMBtu	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
				VOC	1354	lb/month	Catalytic Oxidation, Flue Gas Recirculation, Low NOx Bu..
		385770	11/22/02	CO	100	ppmvd at 3% O2	Good Combustion Practice (Unspecified)
				NOX	9	ppmvd at 3% O2	Ultra Low NOx Burners (ULNB)
		405470	5/19/04	CO	100	ppmvd at 3% O2	Flue Gas Recirculation, Ultra Low NOx Burners (ULNB)
				NOX	9	ppmvd at 3% O2	Flue Gas Recirculation, Ultra Low NOx Burners (ULNB)
		347790	12/2/99	CO	50	ppmvd at 3% O2	Good Combustion Practice (Unspecified)
							Selective Catalytic Reduction (SCR)
				NH3	5	ppmvd at 3% O2	Selective Catalytic Reduction (SCR)
				NOX	7	ppmvd at 3% O2	Selective Catalytic Reduction (SCR)
		364408	6/8/01	CO	50	ppmvd at 3% O2	Ultra Low NOx Burners (ULNB)
				NOX	9	ppmvd at 3% O2	Ultra Low NOx Burners (ULNB)
		562449	3/22/16	NOX	5	ppmvd at 3% O2	Low NOx Burner (LNB), Selective Catalytic Reduction (S..
					40	ppmvd at 3% O2	Low NOx Burner (LNB), Selective Catalytic Reduction (S..

A value of -999 indicates no numerical limit is required to be met, rather a specific control configuration or management practice is required.