Standard Air Contaminant Discharge Permit
Review Report
Lane Regional Air Protection Agency

American Laminators
12796 Highway 36
Swisshome, Oregon 97480
http://www.americanlaminators.com

Permit No. 200021

Source Information:

SIC	2439
NAICS	321213

Source Categories (LRAPA Table 1 Part B)	B45: Millwork Mfg, Structural Wood Members, B12: Fuel Burning Equip. >10 MMBtu/hr
Public Notice Category	Category II -LRAPA 37-0066(4)(a)(A)

Compliance and Emissions Monitoring Requirements:

FCE	Once every 3 years
Compliance schedule	
Unassigned emissions	
Emission credits	
Special Conditions	

Source tests	Within 18 mos permit issuance
COMS	
CEMS	
PEMS	
Ambient monitoring	

Reporting Requirements

Annual report (due date)	March 1st
Quarterly report (due dates)	NA

Monthly report (due dates)	NA
Excess emissions report	
Other (specify)	

Air Programs

Synthetic Minor (SM)	**Yes** (HAPs)
CAM	
NSPS (list subparts)	
NESHAP (list subparts)	**A,6J**
CAO	
NSR	

PSD	
GHG	Not required, below reporting threshold
RACT	
TACT	
Other (specify)	

PERMITTING

PERMITTEE IDENTIFICATION

1. Diversified Wood Resources, LLC dba American Laminators ("American Laminators" and/or "the facility") manufactures a variety of glulam beams at its facility at 12796 Highway 36 Swisshome, Oregon. American Laminators also has a main office and a manufacturing operation (Duco-Lam, Inc (ODEQ General ACDP AQGP-10, Source #10-0004)) in Drain, Oregon (Douglas County).

PERMITTING ACTION

2. The proposed permit is a renewal of an existing Standard Air Contaminant Discharge Permit (ACDP #200021) that was issued on July 10, 2015, amended on April 11, 2017, and originally scheduled to expire on July 10, 2020. The facility is permitted as a Standard Synthetic Minor (SM-80) ACDP because the facility operates a process listed in LRAPA title 37 Table 1, Part B:45 (Millwork manufacturing, including structural wood members), Part B:12 (Boilers > 10 MMBtu/hr heat input) and Part C:5 (PTE more than 100 tons or more of any regulated pollutant (CO), except GHG, in a year) and is therefore required to obtain an air contaminant discharge permit. The existing ACDP remains in effect until final action on the renewal application because the facility submitted a timely and complete application for renewal.

   The facility was previously permitted as SM-80 for HAPs (LRAPA title 37 Table 1 Part C:6 - PTE 10 tons or more of a single HAP (Phenol)/year and Part C:7 - PTE 25 tons or more of all HAPs combined/year) but, with the switch to lower HAP-emitting laminated beam adhesive formulations, the facility no longer has the potential to emit HAPs above 10 tons of a single HAP or 24 tons of all HAPs combined. Also, previously Phenol was the highest single HAP emitted by the facility but, with the adhesive reformulations, Methanol (PTE < 2 tons/year) is highest single HAP emitted by the facility

   As part of the renewal, LRAPA has added new and updated requirements to the permit. The main changes include updating lumber kiln emission factors (EFs) based on new (October 2021) DEQ Lumber Drying emission factors (AQ-EF09 (Oct. 2021), addition of new Boiler #2 feedwater meter and data recorder, added boiler monitoring, recordkeeping and testing requirements, recalculation VOC and HAP emissions based on new glulam adhesive formulations, establishing formal HAP PSELs and documenting compliance actions at the facility since the issuance of the ACDP in July 2015.

ATTAINMENT STATUS

3. The source is located in an attainment area for PM, PM_{10}, $PM_{2.5}$, NO_x, SO_2, CO, VOC, Ozone and Lead (Pb).

SOURCE DESCRIPTION

OVERVIEW

4. The facility manufactures both custom and stock glued-laminated (glulam) beams. American Laminators purchased the lumber dry kilns & boiler operation from Elk River Enterprises, Inc./Tidewater Dry Kilns in 1978, began operation in 1979, and added the laminating beam plant in 1980. Glulam beams are primarily manufactured from Douglas Fir lumber dried in the facility's lumber kilns (5). The facility also dries limited amounts of Alaskan Yellow Cedar and Southern Yellow Pine based customer specifications. The facility operates two (2) wood-fired boilers (EU-Boilers #1 & #2) to produce steam for the dry kilns. The boilers are controlled by a multiclone and a wet scrubber (in-series) and the biomass fuel consists largely of dry planer shavings and hogged-fuel from wood machining and planing equipment used in production of laminated beams. The facility uses two (2) cyclones to control the emissions of PM, PM_{10} and $PM_{2.5}$ from millwork

activities.

5. The following changes have been made to the facility since the last permit renewal:

   a. An LRAPA-initiated "Non NSR/PSD Simple Technical Permit Modification" ACDP Permit Addendum No. 1 was issued by LRAPA on April 11, 2017 to "update the wood-fired boiler emission factors based on testing performed in 2016". The June 21, 2016 emission factor verification and PM source tests demonstrated that Boiler #2.was out-of-compliance with the 0.14 gr/dscf grain loading limit. See **Compliance History** section below (Items 7 & 8).
   b. The EU-Boilers multiclone was replaced in June 2018 and fans and automatic controls were added to control boiler particulate emissions (NC-200021-A18);
   c. Due to poor performance and PM control efficiency of the *Wellons* multiclone (replaced in June 2018), the modified *Wellons* multiclone was replaced in November 2019 with a custom-built *Boiler & Steam Systems* multiclone (modified NC-200021-A18) prior to the January 2020 compliance source test (see Review Report Item 9).

PROCESS AND CONTROL DEVICES

6. The existing air contaminant sources at the facility consist of the following:

Device/ Process ID	Device/Process Description	Construction/ Installation Date	Pollution Control Device ID	Pollution Control Device Description	Construction/ Installation Date	Control Efficiency
EU-Millwork: Wood Activities	Lumber Planer (EQ-01) softwood lumber planer (1) shavings	Prior to 1978	EQ-01	Green Bin Shavings Cyclone (Shavings also routed to EQ-03)	1979	Medium Eff.
	Lam Beam Planer (EQ-03): Finger-jointer, band saw, beam planer, cutoff saw, 2 trim saws & hog/chipper (EQ-02)	1980	EQ-03	Blue Bin Cyclone (for Boiler Fuel)	1979	Medium Eff.
EU-Glulam Plant (EP-05) Adhesives	Lam Beam Face Adhesives	1980 (with Glulam Plant)	NA	**NA** (Fugitive HAP & VOCs)	NA	NA
	Lam Beam Finger-joint Adhesives	1980 (with Glulam Plant)	NA	**NA** (Fugitive HAP & VOCs)	NA	NA
EU-Kilns Lumber Dry Kilns (5)	Five dry kilns: softwood lumber typically dried at ≤180°F	Prior to 1978	NA	**NA** (Fugitive HAP & VOCs)	NA	NA
EU-Boilers: 2 *Economic* Wood-fired boilers	Boiler #1 (EQ-04) 200 HP, 6.7 MMBtu/hr max	1978	EP-03	Multicone and Wet Scrubber System (Original installation 1981, modified in 2018 & 2019)	2019 (NC200021-A18 with 2019 modification for custom-built multiclone upgrade)	Estimated 70% CE for combined control system
	Boiler #2 (EQ-05) 150 HP, 5.0 MMBtu/hr max	1981 (NC#200021-A81)	EP-03			

EU-Millwork: Two (2) cyclones, which exhaust directly to the atmosphere, are used to control particulate emissions from the millwork material handling activities. Both cyclones were installed in 1979. There are also three (3) wood waste hoppers/bins for overflow wood trim material. Cyclone EQ-01 collects shavings from the lumber planing mill (one softwood planer). Lumber mill shavings collected by Cyclone EQ-01 are either sold or conveyed to Cyclone EQ-03 for use as boiler fuel. Cyclone EQ-03 handles particulate emissions from wood machining equipment including the finger jointer, band mill saw, beam planer, cut-off saw, chipper and two (2) trim saws.

EU-Glulam: Glulam beams are primarily manufactured from Douglas Fir (DF), but the facility also uses Southern Yellow Pine (SP) and/or and Alaskan Cedar (AC) for custom beams based on customer orders. Fugitive VOC/HAP emissions are emitted from wood adhesives applied in glulam beam production and from coating products. Face adhesive (2 types used) and finger-joint

adhesive (one type used) VOC and HAP fugitives are emitted from the radio-frequency-curing laminating presses and cool-down operations. Generally, white (formaldehyde-based) melamine face adhesives are used for custom beam orders and reddish-brown (phenol-formaldehyde-based) face adhesives are used for stock beam production. Finger-joint melamine (methanol-formaldehyde) adhesives are used for both stock and custom beam production.

EU-Kilns: Fugitive VOC/HAPs are also emitted from the five (5) dry kilns. Currently only four (4) of the five (5) dry kilns on-site are operable; only two (2) are used at any one time in the winter months but all four (4) operational kilns are used in the summer months. The permit allows lumber to be dried at a maximum temperature of 200°F but, in practice, kiln drying temperatures do not exceed 180°F, as certified in the facility's annual reports. Note: Kiln VOC and HAP emission factors were updated with DEQ's October 2021 (AQ-EF09) revised factors.

EU-Boilers: The two (2) *Economic* wood-fired boilers share a multiclone and wet scrubber particulate control system (in series) installed as pollution controls (estimated particulate control efficiency = 70%). Boiler #1, installed in 1978, is rated at 6.7 MMBtu/hr (200 HP). Boiler #1 has not operated since 1980 and would require extensive repair/overhaul prior to resuming operation (PCADs #2808). Boiler #2 (NC-200021-A81) is rated at 5.0 MMBtu/hr (150 HP) and is currently the only operating boiler at the facility. The original multiclone – wet scrubber system installation was completed in 1981 (NC-200021-A81). The system was upgraded (with a more efficient Wellons multiclone, fans and automated controls) in June 2018 (NC-200021-A18). Due to poor particulate emission control efficiency (see Aug.2018 source test results (Review Report Item 35)) the multiclone was replaced again in 2019 (modified NC-200021-A18) with a custom-built *Boiler & Steam Systems* multiclone sized specifically for Boiler #2. The facility operates the in accordance with the Boiler Grate-Cleaning approved by LRAPA in August 2021.

COMPLIANCE HISTORY

7. Facility Inspections and Reports (to date since 2015):

July 21, 2021; PCADs #2808: Comprehensive Compliance Status Inspection (Full Compliance Evaluation (FCE)) – In Compliance: Other

April 22, 2020; PCADs #2681: Source Test Results Evaluation – Partial SM80 Compliance Evaluation: In Compliance with Emission Standards: Boiler #2 PM emission rate 4th retest result of 0.053 gr/dscf @ 12% CO_2 in compliance with the permit limit of 0.14 gr/dscf @ 12% CO_2 (See NON 3659 below, Item 8); Emission factor verification test results were 0.224 lbs CO/MMBtu (less than the 9.74 lbs CO/MMBtu April 11, 2017 permit mod emission factor) and 0.174 lbs NOx/MMBtu (greater than the 0.042 lbs NOx/MMBtu April 11, 2017 permit mod emission factor).

January 21, 2020; PCADs #2663: Informational Inspection (and proposed Source Test Observation (date indicated in LRAPA-approved test plan dated Dec 16, 2019)): Partial SM80 Compliance Evaluation – On Schedule: Other Requirements: The facility informed LRAPA during the visit that the source testing firm had changed the test date to January 22, 2020, however, testing was delayed until January 23, 2020 due to computer problems and source test van issues; LRAPA observed ~5% boiler opacity on boiler stack, new multiclone pressure drop, and boiler operating parameters, discussed Boiler #2 operating efficiency, post completed upgrades, with boiler operator. Due to previous commitments, LRAPA was unable to observe the Jan. 23rd compliance source test.

July 11, 2019; PCADs #2585: Issued Notice of Non-Compliance Partial Compliance Evaluation - On Schedule for Procedural Requirements: Announced inspection to issue NON No. 3794 for 2 instances of failure to meet the boiler grain-loading standard as determined by reference stack test methods conducted August 28, 2018 and March 19, 2019. The August 28, 2018 reported test result of 0.172 gr/dscf @ 12% CO_2 and the March 19, 2019 reported test result 0.195 gr/dscf @ 12% CO_2 were both in violation of permit limit of 0.14 gr/dscf @ 12% CO_2. NON No. 3794 "Action Required" included a requirement that the facility submit a plan to demonstrate compliance with

Permit Condition 8 (2015 ACDP boiler grain loading) by August 12, 2019. At the time of the inspection, the facility's plant manager stated the facility had already hired a new boiler consultant to evaluate the boiler operating system and recommend changes to bring the boiler into compliance with emission standards. The facility submitted the Boiler Compliance Plan required by NON No. 3794 on August 6, 2019.

June 12, 2019; PCADs #2577: Source Test Results Evaluation – Partial SM80 Compliance Evaluation: Not in Compliance with Emission Standards: Boiler #2 PM emission rate 3rd retest result of 0.195 gr/dscf @ 12% CO_2 in violation of permit limit of 0.14 gr/dscf @ 12% CO_2 (See NON 3659 below, Item 8), CO and NOx emission factor verification tests reported as 6.30 lbs CO/MMBtu vs 9.74 lbs CO/MMBtu April 11, 2017 permit mod emission factor and 0.248 lbs NOx/MMBtu vs 0.042 lbs NOx/MMBtu April 11, 2017 permit mod emission factor.

March 19, 2019; PCADs #2550: Source Test Observation, Partial Compliance Evaluation - On Schedule for compliance with Emission Standards: Recorded operating parameters during test runs including boiler psi, fuel feed, fans, opacity (~10% during Run #1), kiln max operating temperature (~140ºF). Observed black cake on PM filters from Run #1.

January 8, 2019; PCADs #2516: Informational Inspection, Partial Compliance Evaluation - On Schedule for compliance with Emission Standards: Introduced new LRAPA permit writer to facility, observed blue haze off of boiler scrubber stack condensed water plume, opacity difficult to observe due to fog, viewed scrubber replacement nozzles and new automatic controls for boiler psi and fuel in-feed conveyor.

December 4, 2018; PCADs #2506: Source Test Results Evaluation – Partial SM80 Compliance Evaluation: Not in Compliance with Emission Standards: Boiler #2 PM emission rate retest result of 0.172 gr/dscf @ 12% CO_2 in violation of permit limit of 0.14 gr/dscf @ 12% CO_2 (See NON 3659 below, Item 8), CO and NOx emission factor verification tests reported as 5.94 lbs CO/MMBtu vs 9.74 lbs CO/MMBtu April 11, 2017 permit mod emission factor and 0.071 lbs NOx/MMBtu vs 0.042 lbs NOx/MMBtu April 11, 2017 permit mod emission factor.

August 28, 2018; PCADs #2464: Source Test Observation, Partial Inspection – In compliance with source test procedural requirements; LRAPA EPA Method 9 observations 5-10% opacity & boiler operating parameters.

July 19, 2018; PCADs #2432: Informational Inspection, Partial Compliance Evaluation – On Schedule Other: Facility response to NCP 16-3659 (Item 8), 7 action items on Boiler #2 system upgrades including Wellons multiclone installation, ductwork fabrication, boiler refractory & firebox repairs, upgrade of control panel and fans, hire of boiler consultant and proposed source test schedule.

February 7, 2018; PCADs #2379: Informational Inspection, Partial Synthetic Minor Compliance Evaluation – On Schedule for compliance with Emission Standards: Upon facility notification of boiler #2 operation for kiln drying (first since Oct 2017), LRAPA performed an unannounced inspection, boiler opacity ~5%, discussed progress in boiler upgrades and demonstration of compliance with grain loading standard (see NON 3659 below, Item 8).

October 5, 2017; PCADs #2344: Informational Inspection, Partial Synthetic Minor Compliance Evaluation – On Schedule: Other: Following issuance of NCP 16-3659 with $5600 civil penalty on July 17, 2017 and subsequent facility letter to LRAPA (July 31, 2017) detailing action plan for compliance and requesting a reduction in civil penalty, LRAPA responded with an unannounced inspection: observed boiler plume, facility indicated the boiler operation limited to supplying steam for kiln drying (~two months/year) and building heat, advised facility to notify LRAPA of boiler operation for kiln drying, discussed status of plans to achieve compliance with boiler emissions - facility reported no progress had been made at time of inspection.

September 29, 2016; PCADs #2188: Comprehensive Compliance Status Inspection (Full

Compliance Evaluation (FCE)) - On Schedule for compliance with Emission Standards.; Discussed boiler tune-up, testing and compliance demonstration plan related to NON 3659 (See below, Item 8), facility on schedule to demonstrate compliance with Boiler #2 emission standards

September 1, 2016; PCADs #2176: Comprehensive Compliance Status Inspection – Partial SM80 Compliance Evaluation – On Schedule Other: Unannounced site visit to discuss June 21, 2016 source test results received by LRAPA on August 16, 2016 indicating noncompliance with boiler grain loading limit, facility was unable to provide several permit-required records (kiln temp certification, boiler tune-up report, grate-cleaning log, etc.), facility walk-through, observed Boiler #2 opacity at ~5%.

August 24, 2016; PCADs #2171: Source Test Results Evaluation – Partial SM80 Compliance Evaluation – Not in Compliance with Emission standards: Boiler #2 PM emission rate rest result of 0.490 gr/dscf @ 12% CO_2 in violation of permit limit of 0.14 gr/dscf @ 12% CO_2 (See NON 3659 below, Item 8), CO and NOx emission factor verification tests reported as 9.74 lbs CO/MMBtu vs 2.73 lbs CO/MMBtu permit emission factor and 0.042 lbs NOx/MMBtu vs 0.28 lbs NOx/MMBtu permit emission factor.

June 21, 2016; PCADs #2126 & 2129: Source Test Observation, Partial Inspection – In Compliance with source test procedural requirements: PCADs #2126: Boiler #2 opacity higher than desired (~40%) but difficult to accurately read due to atmospheric conditions, testing ports incorrectly installed below the wet scrubber inside the stack were reinstalled downstream of the scrubber prior to first test run, source tester advised LRAPA that boiler CO levels were higher than the span gas and higher range span gas was brought in from Portland, during first test run the PM filter clogged and was replaced during the 1st test run, during 2nd run, LRAPA personnel observed an opacity was around 40% but could not conduct a proper EPA Method 9 test vs. source testers observed opacity readings below 20%. PCADs #2129: LRAPA documentation of boiler system operating parameters (fan & multiclone pressure drop, scrubber and boiler operating pressure (psi), etc.) during test runs #1 & #2, the significant PM entrainment and high CO levels observed during the runs and observed poor wet scrubber efficiency (appeared as though spray nozzles were not fully operating (due to significant smoke levels at stack exit) were discussed with the facility.

May 10, 2016; PCADs #2112**;** Informational Inspection, Partial Synthetic Minor Compliance Evaluation – In Compliance: Other: The facility had indicated in the Test Plan (submitted April 9, 2016) that testing was to be conducted on May 10 but notified LRAPA on May 9 that the test was postponed until June 21, 2016; LRAPA reviewed stack test protocol and process control monitoring and recordkeeping required during the test with the Plant Manager.

8. Enforcement History

Notice of Non-Compliance (NON) No.3794 was issued to the facility on July 11, 2019 for violation of the 0.14 gr/dscf grain loading limit on Boiler #2 (ACDP Condition 8) based on the results of PM source tests on August 28, 2018 (test result = 0.172 gr/dscf) and on March 19, 2019 (test result = 0.195 gr/dscf). NON No. 3794 required the facility to submit a plan to demonstrate compliance with Permit Condition 8 (2015 ACDP) by August 12, 2019. The facility submitted the plan on August 6, 2019 outlining the action steps the facility was planning to take to come into compliance with Permit Condition 8 (2015 ACDP). The steps included hiring a boiler consultant (Dave Sharp of Boiler & Steam System, LLC.) to evaluate “our entire upgraded boiler system and evaluate what further improvements and modifications that could be made to become in emission compliance.” Based on the boiler consultant’s recommendations, the facility obtained quotes for boiler improvements (metal fabrication, boiler refractory, etc). and committed to completing the boiler improvements by late 2019 and retesting the boiler in early 2020 (see Boiler #2 January 23, 2020 retest results (Review Report Item 35). The facility completed the boiler improvements and test results indicated the source was in compliance with 2015 Permit Condition 8 (1/23/2020 test result = 0.053 gr/dscf (@ 12% CO_2)). While the facility demonstrated compliance with the grain loading limit in Condition 8, there were issues with determining actual boiler steaming rate during

the test so LRAPA will require the facility to retest Boiler #2 for compliance with the grain loading limit and verification of the emission factors for PM, NOx, and CO within 18 months of permit (renewal) issuance. No further action has been taken on NON No. 3794 to date, pending results of the follow up source test expected to be completed in late 2023.

Notice of Civil Penalty (NCP) Assessment Number 16-3659 was issued to the facility on July 10, 2017. A Civil Penalty of $5600 was assessed against the facility for a single violation of failure to comply with Permit requirements for PM emissions from the boiler (exceeding the PM grain-loading limit). NCP 16-3659 required the facility to provide a response to LRAPA within 21 days of receipt of the NCP indicating their option (1 of 3: pay the penalty, request a hearing, or seek a reduction of the civil penalty) for resolution of the violation. On July 21, 2017, the facility responded to NCP 16-3659 (within 21 days of receipt of NCP) requesting a reduction of the $5600 civil penalty and asserted that the wood-fired boiler upgrades had been completed. As a result of reduction request, LRAPA issued a **Stipulated Final Order Number 16-3659 (SFO-16-3659)** on September 27, 2018, which included a reduction of civil penalty from $5600 to $4200. **SFO-16-3659** was signed and agreed upon by the facility on October 2, 2018, and a check for the $4200 civil penalty was received by LRAPA on October 4, 2018. No further enforcement action was taken on boiler grain loading violation until results of two subsequent compliance tests (August 28, 2018 and March 19, 2019), following 2017 and 2018 boiler upgrades, indicated continued violation of the 0.14 gr/dscf standard. See NON 3794 and Inspections (Review Report Item 7) above, and Boiler #2 source test results in Review Report Item 35

Notice of Non-Compliance (NON) No.3659 was issued to the facility on August 28, 2016 for violation of the 0.14 gr/dscf grain loading limit on Boiler #2 (ACDP Condition 8) as determined by the stack test conducted on June 21, 2016. Test results were reported at 0.490 gr/dscf in violation of the 0.14 gr/dscf permit limit (Permit Condition 8 (2015 ACDP). As a result of NON No. 3659 LRAPA issued NCP 16-3659 and SFO 16-3659 described above.

Notice of Non-Compliance (NON) No. 3324 was issued to the facility on October 3, 2011, for failure to initiate and maintain monthly and rolling twelve-month emission calculations and for failure to submit annual reports for calendar years 2009 and 2010. Notice of Violation (NOV) No. 11-3324 was issued to the facility on November 16, 2011 and included an assessed civil penalty in the amount of $2,100. On January 4th, 2012, LRAPA and the facility entered into Stipulated and Final Order (SFO) Number 11-3324 to resolve the violations including a reduced penalty in the amount of $1,050. The facility paid the penalty, and the enforcement file was closed.

Notice of Non-Compliance (NON) No. 1037: On May 9, 1994 NON No. 1037 was issued for failure to inspect and record inspections on the scrubber used to control emissions from the boilers. Corrective action required to resolve the violation included (at least) monthly inspections of the scrubber to assure scrubber operation. No further action was taken or required to resolve the violation.

9. Complaints

During the prior permit period, there were no complaints recorded for this facility.

EMISSIONS

10. Proposed PSEL Information:

Pollutant	Baseline Emission Rate$_{1977}$ (BER) (tons/yr)	Netting Basis (NB)		Plant Site Emission Limit (PSEL)		
		Previous$_{2015}$ (tons/yr)	Proposed (tons/yr)	Previous PSEL$_{2015}$ (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase over Netting Basis (tons/yr)
PM	7.2	7.2	7.2	24	24	16.8
PM_{10}	7.2	7.2	7.2	14	14	6.8
$PM_{2.5}$	NA	5.5	5.5	9	9	3.5
CO	1.8	1.8	1.8	99	99	97.2
NO_X	20	20	20	39	39	19
SO_2	58	58	58	39	39	-19
VOC	1.5	2.0	1.5	40	39	37.5
GHG	NA	NA	NA	74,000	74,000	74,000
Single HAP (Methanol)	NA	NA	NA	NA	9	NA
Combined HAPs	NA	NA	NA	NA	24	NA

a. The **Baseline Emission Rates (BERs), Netting Bases (NB),** and **PSELs** for PM, PM_{10}, CO, NO_X, SO_2 and VOC were established in previous permitting actions and there is no new information that effects the previous determinations.
b. A **Baseline Emission Rates (BER)** is not required for $PM_{2.5}$ in accordance with the definition of "baseline emission rate" in LRAPA title 12. The $PM_{2.5}$ **netting basis** was established with the July 2015 permitting action as the ratio of the fraction of PM_{10} that is $PM_{2.5}$ (0.77) multiplied by the PM_{10} netting basis (7.2 tons/year). No "true-up" was necessary since the $PM_{2.5}$ required PSEL minus the $PM_{2.5}$ calculated netting basis (5.5 tons/year) was less than the 10 ton/year Significant Emission Rate (SER) for $PM_{2.5}$. The generic $PM_{2.5}$ **PSEL** of 9 TPY was established as part of the 2015 permit renewal and has not changed with the current permit renewal.
c. The VOC PSEL was revised based on updated DEQ HAP and VOC Lumber Drying emission factors (AQ-EF09, October 2021) and revised VOC and HAP emissions factors from caul plate tests based on new, lower emitting, laminating face and finger-joint adhesives. Because annual VOC emissions from the facility are well below the current VOC PSEL of 40 TPY, and VOC emissions from adhesive use are much lower than calculated in previous renewals, the proposed VOC PSEL has been set at the generic level of 39 TPY.
d. In accordance with LRAPA titles 12 & 42, the proposed PSELs for all pollutants are set at the generic PSEL level which was set at the source-specific level accounting for **baseline** emissions and has a potential to emit that is greater than the Significant Emission Rate (SER) for CO.
e. The facility did not request a GHG baseline be established and the generic GHG PSEL was established in the 2015 permit renewal, in accordance with LRAPA title 42. The facility is not required to report GHG emissions because the facility GHG emissions are well below the de minimis reporting threshold of 2,756 tons of CO2e/year, as defined in LRAPA title 12.
f. **Baseline Emission Rates (BERs)** are not required for a single HAP or combined HAPs in accordance with the definition of "baseline emission rate" in LRAPA title 12 and title 42. In accordance with LRAPA 42-0040 and 42-0060, LRAPA has proposed **PSELs** for HAP_{single} and $HAP_{combined}$ at the generic PSEL levels to establish enforceable potential to emit (PTE) limits and ensure the facility does not trigger the major source threshold for any single or combined

HAP. The facility had the potential to become a major source for HAPs but has demonstrated through annual reporting that it has not triggered the major source thresholds for any single HAP (phenol in the previous permits) or combined HAPs. Methanol, due to lower-emitting adhesive reformulations, is now the highest single HAP emitted by the facility. With updated HAP emission factors for both laminating adhesives and lumber drying, the facility no longer has the potential to emit HAPs at a major source level for either a single HAP or combined HAPs at permitted production rates. While the facility has not had HAP PSELs specifically established in prior permits, it has always demonstrated compliance with the HAP PSELs limits proposed above, and as required by Permit Condition 7 (HAP limits, 2015 ACDP), to verify their status as a Synthetic Minor area source for HAPs. HAP PSELs are being added with this current renewal.

SIGNIFICANT EMISSION RATES (SER) ANALYSIS

11. The baseline emissions for the facility were established during the 2012 permit renewal action and, except for VOC, were not revised with this permit action. The BER for VOC was revised based on better information in the 2015 permit renewal. Estimated emissions are based on emission factors from LRAPA's General Permit for Sawmills, boiler manufacturer and source test data, newly adopted DEQ dry kiln VOC and/or HAP emission factors (AQ-EF09, October 2021) and revised VOC and HAP emission factors for laminating adhesives. The table above includes each pollutants' baseline emission rate, netting basis and PSEL to show that PSEL increase above the proposed netting basis are all less than the SER.

PSEL COMPLIANCE DEMONSTRATION

12. To ensure that the 12-month rolling PSELs are not exceeded, the facility is required to perform emission calculations by the 15th day of each month and submit annual reports by March 1st of each year to LRAPA. For GHGs, compliance with the PSEL is determined by complying with the Oregon GHG reporting program requirements specified in division 215 (as applicable).

13. To further ensure continuous compliance with the PSELs, the facility is required to keep records of the following information for a period of five (5) years after data entry.

Item	Emission Source, Unit Device or Activity (EU-ID#)	Permit Condition #	Process, Parameter or Production (units)	Minimum Monitoring & Recording Frequency
A	Facility-Wide Annual (rolling 12-consectutive calendar months) PSEL	6.2	Rolling 12-month PSEL(tons/yr) Compliance Demonstration	By the 15th of each Month
B	EU-Boilers Steam Produced	4.1.a	Pounds steam/hour and pounds steam/day	Per day of Boiler operation
C	EU-Boilers Total Gallons of Boiler # 2 Feedwater used	4.1.a	Gallons of Boiler #2 Feedwater per day of boiler operation	Per day of Boiler operation
D	EU-Boilers Hours of operation of Boiler#2	4.1.a	Total Hours of operation of Boiler #2 per day	Per day of Boiler operation
E	EU-Boilers NESHAP 6J Tune-Ups for Boiler #2	3.3.g & 4.1.c	Boiler Tune-up Report and Compliance Certification	Biennially
F	EU-Boilers Wet Scrubber	4.1.d	Water flow (gpm) and pressure differential reading (psi) both pre & post filter	Per day of Boiler operation
G	EU-Boilers, Wet Scrubber and Multiclone System	4.1.e	Dates of Inspection & Maintenance	Monthly when boilers are operating

Item	Emission Source, Unit Device or Activity (EU-ID#)	Permit Condition #	Process, Parameter or Production (units)	Minimum Monitoring & Recording Frequency
H	EU-Millwork Cyclones (2): EQ-1 and EQ-3	6.2	Bone Dry Tons (BDT)/month	Monthly
J	Operating hours of the Laminating Plant (EU-Millwork – Adhesives)	6.2	Hours of operation per day	Daily
K	EU-Millwork-Adhesives: All VOC/HAP containing materials usage: adhesives, paints, etc.	3.2.a, 6.2, 6.4	Gallons or pounds	Monthly
L	VOC/HAP containing materials density	3.2.a, 6.2, 6.4	Pounds/gallon	Maintain current information (SDS) at all times
M	VOC-containing materials usage	3.2.a, 6.2, 6.4	%VOC by weight	Maintain current information (SDS) at all times
N	HAP-containing materials usage	3.2.a, 6.2, 6.4	% by weight for each HAP	Maintain current information (SDS) at all times
P	Lam Face Adhesives & Hardeners	3.2.a, 6.2, 6.4	Pounds used/month	Monthly
Q	Finger-Joint Adhesives & Hardeners	3.2.a, 6.2, 6.4	Pounds used/month	Monthly
R	Lumber Dried in EU-Kilns by species	6.2	MBF Doug Fir/month MBF Cedar/month	Monthly
S	Max EU-Kilns Drying Temperature	3.1.a, 6.2	Max Drying Temperature (ºF) per EU-Kiln charge	Twice per Kiln Charge

REPORTING REQUIREMENTS

14. The facility is required to submit an annual report as described in the permit.

TITLE V MAJOR SOURCE APPLICABILITY

15. A source that has potential to emit at the major source levels but accepts a PSEL below major source levels is called a synthetic minor (SM). This source does have the potential to emit at major source levels. Therefore, this source is a synthetic minor. The basis for this determination is provided in the PTE Detail Sheet at the end of this Review Report.

CRITERIA POLLUTANTS

16. This facility has the potential to emit (PTE) criteria pollutants at the major source levels (100 tons per year or more of any criteria pollutant) but has accepted PSELs below the major source thresholds. The PTE criteria pollutant emissions detail sheet is provided at the end of this review report. The facility is not a major source of criteria pollutant emissions which has been demonstrated through recordkeeping and reporting.

HAZARDOUS AIR POLLUTANTS (HAPs)

17. This facility has the potential to emit (PTE) hazardous air pollutants at the major source levels (10 tons per year or more of any singe HAP or 25 tons per year of combined HAPs) but has accepted PSELs below the major source thresholds. The facility's current Potential to Emit and 2021 Actual HAP emissions is as follows:

Hazardous Air Pollutant	Previous Permit$_{2015}$ Potential to Emit (tons/year)	2021 Actual Emissions (tons/year)	Proposed Potential to Emit (tons/year)
Acetaldehyde	0.66	0.033	0.442
Acrolein	0.21	0.004	0.020
Benzene	0.01	0.00012	0.050
Formaldehyde	1.23	0.105	0.111
Hydrochloric Acid	0.97	0.019	0.014
****Methanol**	**0.52**	**0.224**	**1.30**
***Phenol**	**11.1**	**2.17**	**0.055**
Propionaldehyde	0.01	0.00058	0.021
Styrene	0.1	0.00188	0.024
Toluene	0.05	0.00091	0.0011
Xylenes	0.001	0.000025	0.0010
Metal & Nonmetal Boiler HAPs	NA	NA	0.17
TOTAL HAPs	**18.61**	**2.46**	**2.21**

***Phenol was** the highest single HAP emitted by the facility in prior permit terms and **was** the pollutant required to be tracked monthly. With the current ACDP renewal, ****Methanol** is now the highest single HAP (PTE < 2 tons per year) emitted by the facility.

18. The HAP emissions estimates for the dry kilns assume that all lumber is dried at temperatures less than 200ºF (Fahrenheit). The permit requires monitoring and recordkeeping of dry kiln temperatures to further ensure the estimation assumption remains valid. In addition, the facility has demonstrated through past monitoring and recordkeeping that, in practice, dry kiln temperatures do not exceed 180°F. Demonstration that the dry kilns typically operate at a maximum temperature of 180°F further ensures that the estimation method remains valid because higher emissions are calculated at 200°F than at 180°F which uses lower HAP emissions factors (based on the new DEQ Lumber Drying EFs (AQ-EF09, October 2021).

19. The HAP emission estimates for adhesive use in glulam production assumes worst-case emissions based on maximum HAP PTE as calculated in the HAP detail sheets at the end of this Review Report. The permit requires monitoring and recordkeeping of the current safety data sheets for all adhesives used at the facility and 12-month rolling HAP emissions calculations using the maximum HAP (% by weight) to demonstrate compliance with the 9 TPY single and 24 TPY combined HAP limits.

CLEANER AIR OREGON (CAO) RISK ASSESSMENT

20. The facility has not been called in to the CAO program by LRAPA at this time, and therefore has not yet performed a risk assessment.

Under the CAO program, only existing sources that have been notified by LRAPA and new sources are

required to perform risk assessments. This source has not been notified by LRAPA and is therefore, not yet required to perform a risk assessment or report annual emissions of toxic air contaminants. LRAPA required reporting of approximately 600 toxic air contaminants in 2016 and regulates approximately 260 toxic air contaminants that have Risk Based Concentrations established in rule. All 187 hazardous air pollutants are on the list of approximately 600 toxic air contaminants. After the source is notified by LRAPA, they must update their inventory and perform a risk assessment to see if they must reduce risk from their toxic air contaminant emissions. Until then, sources will be required to report toxic air contaminant emissions triennially.

21. Air Toxics Emission Inventory (ATEI): As part of the CAO program, sources must submit an ATEI triennially for the purpose of assessing risk from air toxics emitted from the facility. A source must assess, estimate and report actual emissions of any air toxics emitted from the facility which are **listed air toxic contaminants** (~600 listed air toxics in OAR 340-247-8010 Table 1 which includes all 187 **hazardous** air pollutants in the LRAPA HAP program (see list in LRAPA title 44, Table 1)). In the 2020 ATEI, the facility reported ~12,587 **pounds** of air toxics were emitted in 2020. Phenol was the highest single air toxic (HAP) emitted by the facility in 2020 with ~7,854 pounds of phenol reported (from glulam face adhesives) in the facility's 2020 Triennial Air Toxic Emission Inventory.

TOXICS RELEASE INVENTORY (TRI)

22. The Toxics Release Inventory (TRI) is federal program that tracks the management of certain toxic chemicals that may pose a threat to human health and the environment, over which DEQ has no regulatory authority. It is a resource for learning about toxic chemical releases and pollution prevention activities reported by certain industrial facilities. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program. In general, chemicals covered by the TRI Program are those that cause:
    - Cancer or other chronic human health effects;
    - Significant adverse acute human health effects; or
    - Significant adverse environmental effects.

    There are currently over 650 chemicals covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual TRI reports on each chemical.

23. The facility is not subject to reporting to the TRI Program because it does not manufacture, process or use TRI-listed chemicals in quantities above the thresholds.

ADDITIONAL REGULATORY REQUIREMENTS & CONSIDERATIONS

24. The permit limits fugitive emissions from leaving the facility's property in accordance with LRAPA 48-015.

25. The permit limits visible emissions from air contaminant sources (EU-Millwork cyclones), other than wood-fired boilers, to an average of less than or equal to 20% opacity for a period or periods aggregating more than three minutes in any one (1) hour in accordance with LRAPA 32-010(3).

26. The permit limits particulate matter emissions for sources other than fuel burning equipment, refuse burning equipment, and fugitive emission sources, to 0.14 grains per dry standard cubic foot for sources installed, constructed, or modified before or after June 1, 1970, (EU- Millwork cyclones), and for which there are no representative compliance source test results in accordance with LRAPA 32-015(2)(b)(B).

27. The permit limits visible emissions from wood-fired boilers (EU-Boilers) installed, constructed, or modified after June 1, 1970 but before April 16, 2015 to an average of less than or equal to 20% opacity for a period or periods aggregating more than three minutes in any one (1) hour in accordance with LRAPA 32-010(5).

28. The permit limits particulate matter emissions from fuel burning equipment sources (EU-Boilers) to

0.14 grains per dry standard cubic foot for equipment installed, constructed, or modified after June 1, 1970 but before April 16, 2015 in accordance with LRAPA 32-030(1)(b).

NEW SOURCE PERFORMANCE STANDARDS (NSPS) APPLICABILITY

29. 40 CFR Part 60, Subpart A & Dc (New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units) is **not** applicable to the facility because each of the two (2) wood-fired boiler's rated capacity is less than 10 MMBTU/hr.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) APPLICABILITY

30. The facility is an "area source" of HAPs and therefore is **not** subject to the Plywood and Composite Wood Products (PCWP) NESHAP which is applicable only to major sources.

31. The two wood-fired boilers at the facility are subject to the Area Source Boiler NESHAP (Subpart JJJJJJ (6J)) applicable requirements including biennial tune-ups. Boiler 1 is defined as a "limited-use" boiler and its operation is restricted to an annual capacity factor of no more than 10 percent (876 hours/year); the biennial tune-up requirement doesn't apply to limited-use boilers. The facility provided an "Initial Notification Report", signed & certified by the facility superintendent on September 9, 2011, indicating that they anticipated compliance with the Boiler #2 tune-up requirement by the March 21, 2014 NESHAP 6J deadline but the facility indicated that the initial Boiler #2 tune-up was not conducted until July of 2015. The facility documented that subsequent biennial Boiler # 2 tune-ups were conducted on May 31, 2017 and January 9, 2020. Per Subpart 6J, each subsequent tune-ups must be conducted no more than 25 months after the previous tune-up. The facility has been advised of the requirements for conducting and reporting tune-ups in compliance with the NESHAP 6J permit conditions. Because each boiler is rated at less than 10 MMBtu/hr, the one-time energy assessment is not required, in accordance with 40 CFR 63 Subpart 6J Table 2.

GREEENHOUSE GAS (GHG) REPORTING APPLICABILITY

32. The facility is not subject to greenhouse gas reporting OAR Chapter 340, Division 215 because actual greenhouse gas emissions are less than 2,500 metric tons (2,756 short tons) of CO2 equivalents per year. The facility demonstrated that their annual Greenhouse Gas emissions were well below the GHG reporting threshold of 2500 metric tons of CO_2e per year (2017-2020) and. Per OAR 340-215-0034(1)(c), the facility notified LRAPA in writing on April 30, 2021, of their intent to cease reporting GHG CO_2e emissions each year. If the source ever emits more than this amount, they will be required to report greenhouse gas emissions.

TYPICALLY ACHIEVABLE CONTROL TECHNOLOGY (TACT) APPLICABILITY

33. LRAPA title 32-008 requires an existing emission unit at a facility to meet TACT if: the emissions unit results in emissions of criteria pollutants greater than ten (10) tons per year of any gaseous pollutant or five (5) tons per year of PM; the emissions unit is not subject to the emissions standards under LRAPA title 32, title 33, title 39, or title 46 for the pollutants emitted; and if the facility is required to have a permit. The boilers emits more than 10 tons of NO_X and CO and is required to meet TACT; LRAPA has determined that there are no controls other than 'good combustion practices' required for these boiler types/sizes. The dry kilns emit more than 10 tons of gaseous pollutants and are therefore required to meet TACT. LRAPA has determined that there are no control technologies typically achieved for dry kilns.

NEW SOURCE REVIEW (NSR) AND PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

34. The facility is located in an area that is designated attainment for all pollutants. There are no increases in the PSELs above the netting basis by more than the SER, so the facility isn't subject to PSD

SOURCE TESTING

PRIOR TESTING RESULTS

35. Prior to the June 21, 2016 source tests, no performance testing is known to have been conducted at this facility. Results of subsequent compliance source testing are summarized below. The permit requires the facility test one of the two wood-fired boilers to determine compliance with the 0.14 gr/dscf particulate emission standard and to verify the emission factors for PM, NO_X and CO. The permit requires testing of the smaller of the two boilers (Boiler #2 rated at 5.0 MMBtu/hr) as it is the most commonly used boiler at the facility. Boiler 1 (rated at 6.7 MMBtu/hr) is used as a backup and has not been operated since 1980. The results of source tests are summarized below:

Emission Device	Test Date	Production Rate	Pollutant	Measured Emission Rate	
Boiler #2 (EU-Boilers)	6/21/2016	4.15 MMBtu/hr Heat Input 3.773 MLbs/hr	PM	0.490 gr/dscf	1.22 lbs/Mlbs Steam
			CO	40.8 lbs/hr	10.30 lbs/Mlbs Steam
			NOx	0.175 lbs/hr	0.045 lbs/Mlbs Steam
			Opacity	8.4% Avg max reading 3-hr test LRAPA observed >40% opacity	
			Fuel HHV	8517 Btu/lb @0% moisture	
			F_d	9,244 dscf/MMBtu	
Boiler #2 (EU-Boilers)	8/28/2018	5.69 MMBtu/hr Heat Input 5.172 MLbs/hr	PM	0.172 gr/dscf	0.523 lbs/Mlbs Steam
			CO	28.7 lbs/hr	6.43 lbs/Mlbs Steam
			NOx	0.44 lbs/hr	0.077 lbs/Mlbs Steam
			Opacity	8.5% Avg max reading 3-hr test	
			Fuel HHV	8069 Btu/lb @0% moisture	
			F_d	10,214 dscf/MMBtu	
Boiler #2 (EU-Boilers)	3/19/2019	3.36 MMBtu/hr Heat Input 3.052 MLbs/hr	PM	0.196 gr/dscf	0.538 lbs/Mlbs Steam
			CO	36.50 lbs/hr	6.922 lbs/Mlbs Steam
			NOx	1.44 lbs/hr	0.272 lbs/Mlbs Steam
			Opacity	6.3% Avg max reading 3-hr test	
			Fuel HHV	8065 Btu/lb @0% moisture	
			F_d	9,983 dscf/MMBtu	
Boiler #2 (EU-Boilers)	1/23/2020	11.156 MMBtu/hr Heat Input 10.142 MLbs/hr	PM	0.053 gr/dscf	0.136 lbs/Mlbs Steam
			CO	2.48 lbs/hr	0.246 lbs/Mlbs Steam
			NOx	1.96 lbs/hr	0.192 lbs/Mlbs Steam
			Opacity	3.8% Avg max reading 3-hr test	
			Fuel HHV	8462 Btu/lb @0% moisture	
			F_d	9,701 dscf/MMBtu	

PROPOSED TESTING

36. Within 18 months of permit issuance, the facility must conduct source tests on Boiler #2 to demonstrate compliance with the PM 0.14 gr/dscf grain-loading standard and emission factor verification tests for PM, NOx and CO.

PUBLIC NOTICE

37. The proposed permit was on notice for public comment from July 19, 2022 to August 18, 2022. No written comments were submitted during the 30-day comment period.

KEC/cmw
8/22/2022

REGULATED POLLUTANT EMISSION FACTOR DETAIL SHEET

Regulated Pollutant Emission Factors (EF)				
Emission Unit: EU ID	**Pollutant**	**Emission Factor**	**EF Units**	**EF Source/Reference**
EU-Boilers: Boiler #1 (EQ-04) & Boiler #2 (EQ-05) w/combined multiclone-wet scrubber control system Note: 1000 lbs steam = Mlbs steam = 1.2 MMBtu	PM	0.168	lb/Mlb Steam	DEQ AQGP-010 13.1.a PM EFw/ratioed allowable gr/dscf & 70% PM CE (10/2017)
		0.140	lb/MMBtu	DEQ AQGP-010 13.1.a PM EFw/ratioed allowable gr/dscf & 70% CE in lb/MMBtu
	PM_{10}	0.084	lb/Mlb Steam	DEQ AQGP-010 13.1.a. PM_{10} EF = 50% of PM EF (10/2017)
		0.070	lb/MMBtu	DEQ AQGP-010 13.1.a. PM_{10} EF = 50% of PM EF (10/2017) in lbs/MMBtu
	$PM_{2.5}$	0.084	lb/Mlb Steam	DEQ AQGP-010 13.1.a. $PM_{2.5}$ EF = 50% of PM EF (10/2017)
		0.070	lb/MMBtu	DEQ AQGP-010 13.1.a. $PM_{2.5}$ EF = 50% of PM EF (10/2017) in lbs/MMBtu
	NOx	0.31	lb/Mlb Steam	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017)
		0.26	lb/MMBtu	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017) in lbs/MMBtu
	SO_2	0.014	lb/Mlb Steam	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017)
		0.012	lb/MMBtu	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017) in lbs/MMBtu
	CO	3.0	lb/Mlb Steam	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017)
		2.5	lb/MMBtu	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017) in lbs/MMBtu
	VOC (as propane)	0.16	lb/Mlb Steam	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017)
		0.13	lb/MMBtu	DEQ AQGP-010, Section 13.1.a: Dutch Oven EFs (10/2017) in lbs/MMBtu
	Highest Single Boiler HAP: Formaldehyde	1.22E-03	lb/Mlb Steam	NCASI TB 1013 Wood-Fired Boilers Table 4.1 Mean converted to lbs/Msteam
		1.02E-03	lb/MMBtu	NCASI TB 1013 Wood-Fired Boilers Table 4.1 Mean Value
	Aggregate Boiler HAP	9.43E-03	lb/Mlb Steam	Aggregate NCASI TB 1013 & AP-42 Wood-fired Boilers **Nonmetal + Metal** EFs in lbs/Msteam
		7.86E-03	lb/MMBtu	Aggregate NCASI TB 1013 & AP-42 Wood-fired Boilers **Nonmetal + Metal** EFs
EU-Millwork: Cyclones (2) Green Bin Cyclone EQ-1 & Blue Bin Cyclone EQ-3	PM	0.500	lb/BDT	DEQ AQGP-010 13.2 PM EF for Medium Efficiency Cyclone (10/2017)
	PM10	0.425	lb/BDT	DEQ AQGP-010 13.2 PM_{10} EF for Medium Efficiency Cyclone (10/2017)
	PM2.5	0.250	lb/BDT	DEQ AQGP-010 13.2 $PM_{2.5}$ EF for Medium Efficiency Cyclone (10/2017)
EU-Millwork Brown Face Adhesives (LT-75C+FM260 (Worst-case Brown Adh EFs))	VOC	0.0016	lb/lb applied adh mix	Hexion Caul Plate Test **Brown Face Adhesive(LT-75C+FM260)** April 2022
	Single HAP-MeOH	0.0006	lb/lb applied adh mix	Hexion Caul Plate Test **Brown Face Adhesive(LT-75C+FM260)** April 2022
	Total HAP	0.0012	lb/lb applied adh mix	Hexion Caul Plate Test **Brown Face Adhesive(LT-75C+FM260)** April 2022
EU-Millwork White Face Adhesive (6500+M-650Y)	VOC (by weight)	0.007	lb/lb applied adh mix	Hexion Caul Plate Test **White Face Adhesive(6500+M-650Y)** July 2020
	Single HAP-MeOH	0.0056	lb/lb applied adh mix	Hexion Caul Plate Test **White Face Adhesive(6500+M-650Y)** July 2020
	Total HAP	0.0058	lb/lb applied adh mix	Hexion Caul Plate Test **White Face Adhesive(6500+M-650Y)** July 2020
EU-Millwork Finger-joint Adhesive (4720+5025A)	VOC (by weight)	0.00891	lb/lb applied adh mix	Hexion Caul Plate Test **FingerJoint Adhesive (4720+5025A)** May 2022
	Single HAP-MeOH	0.00773	lb/lb applied adh mix	Hexion Caul Plate Test **FingerJoint Adhesive (4720+5025A)** May 2022
	Total HAP	0.0078	lb/lb applied adh mix	Hexion Caul Plate Test **FingerJoint Adhesive (4720+5025A)** May 2022
EU-Kilns Five (5) Dry Kilns: Kiln EFs for Drying Douglas Fir	$PM/PM_{10}/PM_{2.5}$	0.02	lb/MBF Doug Fir	DEQ AQGP-010, Section 13.3: Steam-Heat Kilns **Doug Fir EF** (Oct 2017)
	VOC (as propane)	1.116	lb/MBF Doug Fir	DEQ AQ-EF09 VOC EF for **Doug Fir** kiln-dried @200°F Max, Oct. 2021
	Single HAP-MeOH	0.0754	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for **Doug Fir** kiln-dried @200°F Max, Oct. 2021
	Total HAP	0.123	lb/MBF Doug Fir	DEQ AQ-EF09 Aggregate HAP EF for **Doug Fir** kiln-dried @200°F Max, Oct. 2021
Kiln EFs for Drying Western Cedar	$PM/PM_{10}/PM_{2.5}$	0.05	lb/MBF W. Cedar	DEQ AQGP-010, Section 13.3: Steam-Heat Kilns White Fir EF (10/2017)
	VOC (as propane)	0.7611	lb/MBF W. Cedar	DEQ AQ-EF09 VOC EF for **W. Cedar** kiln-dried @200°F Max, Oct. 2021
	Single HAP-MeOH	0.2295	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for **W. Cedar** kiln-dried @200°F Max, Oct. 2021
	Total HAP	0.292	lb/MBF W. Cedar	DEQ AQ-EF09 Aggregate HAP EF for **W. Cedar** kiln-dried @200°F Max, Oct. 2021

HAP EMISSION FACTOR DETAIL SHEET

HAP Emission Factors (EF)				
Emission Unit: EU ID	**Pollutant**	**Emission Factor**	**EF Units**	**EF Source/Reference**
EU-Boilers #1 & #2: Organic HAPs, HF & HCl, Furans & Dioxins	Acetaldehyde	2.83E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Acetophenone	1.84E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Acrolein	2.60E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Benzene	9.80E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Bromomethane (methyl bromide)	1.14E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Carbon Disulfide	1.25E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Carbon Tetrachloride	2.01E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Chlorine	7.90E-04	lb/MMBtu	AP-42 Wood Combustion Table 1.6-3, Average
	Chlorobenzene	1.66E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Chloroform	2.01E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Chloromethane (methyl chloride)	3.78E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Cumene (Isopropybenzene)	1.77E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	1,2-Dichlorpropane (propylene dichloride)	1.68E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	bis(2-Ethylhexl)phthalate (DEHP)	4.65E-08	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Dibutyl phthalate	3.33E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	2,4-Dinitrophenol	1.31E-07	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	2,4-Dinitrotoluene	9.42E-07	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Ethyl benzene	3.95E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Ethylene dichloride (EDC, 1,2-dichloroethane)	2.92E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Formaldehyde	1.02E-03	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Hexachlorobenzene	1.03E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Hexane	2.88E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Hydrochloric acid	2.66E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value[c] w/scrubber control
	Hydrogen fluoride (hydrofluoric acid)	1.69E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value[c] w/scrubber control
	Methanol	7.32E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Methylene dichloride (Dichloromethane)	5.47E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Methyl isobutyl keytone (MEK, hexone)	4.45E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Naphthalene	9.96E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	4-Nitrophenol	9.41E-08	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Pentachlorophenol	2.29E-07	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Phenol	1.60E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Polychlorinated biphenols	7.86E-09	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value (sum of 6 PCB EF)
	Propionaldehyde	2.52E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Styrene	4.77E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Tetrachlorethene (perchloroethylene)	2.46E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Toluene	2.11E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	1,1,1-Trichloroethane (methyl chloroform	5.78E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Trichloroethene (TCE, trichloroethylene)	1.99E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	2,4,6-Trichlorophenol	2.76E-07	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Vinyl chloride	1.84E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	m-Xylene	3.54E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	o-xylene	1.13E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Xylene (isomers and mixture)	5.22E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value
	Dioxins	4.22E-11	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Average EF of 7 Dioxin Cmpds
	Furans	3.99E-11	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Table 4.1 Average EF of 10 Furan Cmpds
	Aggregate Non-Metal Boiler HAP EF	**7.51E-03**	lb/MMBtu	Aggregate of NCASI TB 1013 & AP-42 Wood-fired Boilers EFs
EU-Boilers #1 & #2: Metal HAPs	Antimony and compounds	3.11E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Arsenic and compounds	1.11E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber
	Beryllium and compounds	1.34E-07	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Cadmium and compounds	4.99E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Chromium and compounds	2.45E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Cobalt and compounds	1.95E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber
	Lead and compounds	3.62E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber
	Manganese and compounds	2.50E-04	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers Metals Table 4.3 Mean Value Wet Scrubber
	Mercury and compounds	1.77E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Nickel and compounds	1.32E-05	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Selenium and compounds	3.25E-06	lb/MMBtu	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector
	Aggregate Metal Boiler HAP EF	**3.50E-04**	lb/MMBtu	Aggregate NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 EFs
EU-Boilers: Total HAP	**Aggregate of all Boiler HAP**	**7.86E-03**	lb/MMBtu	Aggregate NCASI TB 1013 & AP-42 Wood-fired Boilers **Nonmetal + Metal** EFs
EU-Millwork- Adhesives: Brown Face Adhesives LT-75C+FM-260	Formaldehyde	0.0002	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022
	Methanol	0.0006	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022
	Phenol	0.0004	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022
	Aggregate Face Brown Adhesive HAP EF	**0.0012**	lbs/lb applied adh	Aggregate HAP Hexion Caul Plate Test Face Adh (LT-75C+FM260) April 2022
EU-Millwork- Adhesives: Brown Face Adhesive LT-75C+FM-282	Formaldehyde	0.0001	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022
	Methanol	0.0005	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022
	Phenol	0.0002	lbs/lb applied adh	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022
	Aggregate Face Brown Adhesive HAP EF	**0.001**	lbs/lb applied adh	Aggregate HAP Hexion Caul Plate Test Face Adh (LT-75C+FM282) April 2022
EU-Millwork- Adhesive: White Face Adhesive 6500+M-650Y	Formaldehyde	0.0002	lbs/lb applied adh	Hexion Caul Plate Test White Face Adhesive(6500+M-650Y) July 2020
	Methanol	0.0056	lbs/lb applied adh	Hexion Caul Plate Test White Face Adhesive(6500+M-650Y) July 2020
	Aggregate White Face Adhesive HAP EF	**0.006**	lbs/lb applied adh	Aggregate HAP Hexion Caul Plate Test White Face Adh(6500+M-650Y) July 2020
EU-Millwork- Adhesives: Finger-Joint Adhesive 4720+5025A	Formaldehyde	7.00E-05	lbs/lb applied adh	Hexion Caul Plate Test FingerJoint Adhesive (4720+5025A) May 2022
	Methanol	0.008	lbs/lb applied adh	Hexion Caul Plate Test FingerJoint Adhesive (4720+5025A) May 2022
	Aggregate Finger-Joint Adhesive HAP EF	**0.008**	lbs/lb applied adh	Aggregate HAP Hexion Caul Plate Test FingerJoint Adh (4720+5025A) May 2022
EU-Kilns Five (5) Dry Kilns: Kiln HAP for Drying Douglas Fir	Acetaldehyde	0.043	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021
	Formaldehyde	0.0025	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021
	Methanol	0.0754	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021
	Propionaldehyde	0.0009	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021
	Acrolein	0.0008	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021
_____	**Aggregate Kiln HAP for Drying Doug Fir**	**0.123**	lb/MBF Doug Fir	DEQ AQ-EF09 Aggregate HAP EF for **Doug Fir** kiln-dried @200°F Max, Oct. 2021
Kiln HAP for Drying Western Cedar	Acetaldehyde	0.055	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021
	Formaldehyde	0.0073	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021
	Methanol	0.2295	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021
	Propionaldehyde	**ND**	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar:Propionaldehyde **N**ot **D**etected, Oct. 2021
	Acrolein	**ND**	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar: Acrolein **N**ot **D**etected, Oct. 2021
	Aggregate Kiln HAP for Drying W. Cedar	**0.292**	lb/MBF W. Cedar	DEQ AQ-EF09 Aggregate HAP EF for **W. Cedar** kiln-dried @200°F Max, Oct. 2021

REGULATED POLLUTANTS PSEL & PTE DETAIL SHEET

Diversified Wood Resources, LLC (dba American Laminators), Swisshome Facility - Plant Site Emission Limits (PSELs) / Potential to Emit (PTE) Regulated Pollutants Emissions Detail Sheet

Emission Unit EU-ID	Process/Device ID & Description	Maximum Throughput	Units	PM EF	Units	**PM (TPY)**	PM_{10} EF	Units	**PM_{10} (TPY)**	$PM_{2.5}$ EF	Units	**$PM_{2.5}$ (TPY)**	VOC EF	Units	**VOC (TPY)**
EU-Millwork Activities: Lumber Planer (EQ-01)	EQ-01 Green Bin Shavings Cyclone (EP-01)	10,575	BDT/year	0.5	lb/BDT	**2.6**	0.425	lb/BDT	**2.2**	0.250	lbs/Mlb Steam	**1.3**	NA	NA	NA
EU-Millwork Activities: Lam Beam Planer, Saw & Hog	EQ-03 Blue Bin Cyclone (EP-02 for Boiler Fuel)	10,575	BDT/year	0.5	lb/BDT	**2.6**	0.425	lb/BDT	**2.2**	0.250	lb/BDT	**1.3**	NA	NA	NA
EU-Kilns (EP-04): 5 Lumber Dry Kilns	Lumber Drying @ Max 200°F for Doug Fir or Cedar Max Throughput = 19,350 MBF/yr all species combined	17,415	MBF D. Fir/yr (90% of Max)	0.02	lb/MBF Doug Fir	**0.2**	0.020	lb/MBF Doug Fir	**0.2**	0.020	lb/MBF Doug Fir	**0.2**	1.116	lb/MBF DougFir	**9.7**
		1,935	MBF Cedar/yr (10% of Max)	0.05	lb/MBF Cedar	**0.05**	0.050	lb/MBF Cedar	**0.05**	0.050	lb/MBF Cedar	**0.05**	0.7611	lb/MBF Cedar	**0.7**
EU-Boilers: 2 Wood-fired Boilers #1 & #2 **(Combined Heat Input 11.7 MMBtu/hr)** w/multiclone & scrubber control system **(70% PM CE)**	EQ-04 Boiler#1 (6.7MMBtu/hr) EQ-05 Boiler#2 (5.0MMBtu/hr) Assume 8760 op hrs/yr & 1000lbs Steam=1.2MMBtu	85,410	Mlbs Steam/year	0.168	lbs/M Steam	**7.2**	0.084	lbs/M Steam	**3.6**	0.084	lbs/M Steam	**3.6**	0.13	lbs/M Steam	**5.6**
EU-Millwork-Adhesives (EQ-05): Brown Face Adhesives **(Worst case LT75C+FM260 mix)**	Brown Face Adhesives = 85% of maxium of 369,000 lbs/yr of face adhesive/hardener mix	313,650	lbs/lbs face adh mix applied	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0016	lb/lb applied adh mix	**0.3**
EU-Millwork-Adhesives (EQ-05): White Face Adhesives	White Face Adhesives = 15% of maxium of 369,000 lbs/yr of face adhesive/hardener mix	55,350	lbs/lbs face adh mix applied	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.007	lb/lb applied adh mix	**0.2**
EU-Millwork-Adhesives (EQ-05): Finger Joint Adhesives	Max Finger Joint Adh Mix = 35,100 lbs/yr	35,100	lb/lb fingerjoint adh mix applied	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00891	lb/lb applied adh mix	**0.2**
Total PTE					**PM (TPY)=**	**12.7**		**PM_{10} (TPY)=**	**8.3**		**$PM_{2.5}$ (TPY)=**	**6.5**		**VOC (TPY)=**	**16.6**

Emission Unit EU-ID	Process/Device ID & Description	Maximum Throughput	Units	NOx EF	Units	**NOx (TPY)**	SO_2 EF	Units	**SO_2 (TPY)**	CO EF	Units	**CO (TPY)**	GHG EF	Units	**GHG (TPY)**
EU-Boilers: 2 Wood-fired Boilers #1 & #2 **(Combined Heat Input 11.7 MMBtu/hr)** w/multiclone & scrubber control system	EQ-04 Boiler#1 (6.7MMBtu/hr) EQ-05 Boiler#2 (5.0MMBtu/hr) Assume 8760 op hrs/yr & 1000lbs Steam=1.2MMBtu	85,410	Mlbs Steam/year	0.31	lbs NOx/Mlb Steam	13.2	0.014	lbs SO_2/Mlb Steam	0.6	3.0	lbs CO/Mlb Steam	128.1	247.6	lbs GHG (CO_2e)/Mlb St	**10575.1**
Total PTE					**NOx (TPY)=**	**13.2**		**SO_2 (TPY)=**	**0.6**		**CO (TPY)=**	**128.1**		**GHG (TPY)=**	**10575.1**

Note: For all Emission Factor references (except GHGs) see Regulated Pollutant Emission Factor Detail Sheet, Review Rpt pg. 15; GHG EF from 40 CFR 98 Table C-1 converted to lbs/M Steam

Summary of Facility Emissions

Pollutant	Baseline (TPY)	Netting Basis (TPY)	PSEL (TPY)	Increase Over Netting Basis (TPY)	Current PTE (TPY)	Unassigned Emissions (TPY)	SER (TPY)
PM	7.2	7.2	24	16.8	12.7	0	25
PM_{10}	7.2	7.2	14	6.8	8.3	0	15
$PM_{2.5}$	NA	5.5	9	3.5	6.5	0	10
CO	1.8	2	99	97.2	128.1	0	100
NO_X	20	20	39	19	13.2	0	40
SO_2	58	58	39	-19	0.6	0	40
VOC	1.5	1.5	39	37.5	16.6	0	40
GHG	NA	NA	74,000	74,000	10,575	NA	75,000
HAP_{single}	NA	NA	9	NA	1.3	NA	NA
$HAP_{aggregate}$	NA	NA	24	NA	2.2	NA	NA

$PM_{2.5}$ Netting Basis Establishment:

	PM10 PSEL (tpy)	PM2.5 Fraction of PM10 (%)	PM2.5 (tpy)
Material Handling Cyclones	0.0	0.5	0.0
Dry Kilns	6.6	1	6.6
Boilers	5.6	1	5.6
	12.2		12

PM2.5/PM10 PSEL Ratio =	1.00	Fraction of PM10 that is PM2.5	
PM10 netting basis =	7.2	tons/year	1977 Baseline Emission Rate
PM2.5 netting basis =	7.2	tons/year	calculated as PM10 PSEL x fraction
PM2.5 required PSEL	6	tons/year	
PM2.5 req. PSEL-PM2.5 NB	-2	tons/year	<10 ton/year SER for PM2.5
PM2.5 netting basis (true up):	NA	tons/year	True up not required

PM2.5 netting basis established in accordance w/DEQ "PM2.5 Netting Basis & PSEL Corrections..." IMD (Feb. 2012)

HAP PSEL & PTE DETAIL SHEET (page 1 of 2)

HAP PSEL/PTE Emissions Detail Sheet							Page 1 of 2
Emission Unit: EU ID	**Pollutant**	**Maximum Production/Process Rates**	**Units**	**Emission Factor**	**EF Units**	**EF Source/Reference**	Emissions PTE tons/yr
EU-Boilers #1 & #2	Acetaldehyde	85,410	M lbs steam/yr	3.40E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.45E-02
	Acetophenone	85,410	M lbs steam/yr	2.21E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	9.43E-05
Organic HAPs, HF & HCl,	Acrolein	85,410	M lbs steam/yr	3.12E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.33E-02
Furans & Dioxins	Benzene	85,410	M lbs steam/yr	1.18E-03	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.02E-02
Emissions	Bromomethane (methyl bromide)	85,410	M lbs steam/yr	1.37E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.84E-04
	Carbon Disulfide	85,410	M lbs steam/yr	1.50E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	6.41E-03
	Carbon Tetrachloride	85,410	M lbs steam/yr	2.41E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.03E-03
	Chlorine	85,410	M lbs steam/yr	9.48E-04	lb/M lbs Steam	AP-42 Wood Combustion Table 1.6-3, Average converted to lb/M lb Steam	4.05E-02
	Chlorobenzene	85,410	M lbs steam/yr	1.99E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	8.51E-04
	Chloroform	85,410	M lbs steam/yr	2.41E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.03E-03
	Chloromethane (methyl chloride)	85,410	M lbs steam/yr	4.54E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.94E-03
	Cumene (Isopropybenzene)	85,410	M lbs steam/yr	2.12E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	9.07E-04
	1,2-Dichlorpropane (propylene dichloride)	85,410	M lbs steam/yr	2.02E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	8.61E-04
	bis(2-Ethylhexl)phthalate (DEHP)	85,410	M lbs steam/yr	5.58E-08	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.38E-06
	Dibutyl phthalate	85,410	M lbs steam/yr	4.00E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.71E-03
	2,4-Dinitrophenol	85,410	M lbs steam/yr	1.57E-07	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	6.71E-06
	2,4-Dinitrotoluene	85,410	M lbs steam/yr	1.13E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	4.83E-05
	Ethyl benzene	85,410	M lbs steam/yr	4.74E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.02E-02
	Ethylene dichloride (EDC, 1,2-dichloroethane)	85,410	M lbs steam/yr	3.50E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.50E-03
	Formaldehyde*	85,410	M lbs steam/yr	1.22E-03	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.23E-02
	Hexachlorobenzene	85,410	M lbs steam/yr	1.24E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.28E-05
	Hexane	85,410	M lbs steam/yr	3.46E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.48E-02
	Hydrochloric acid	85,410	M lbs steam/yr	3.19E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value[c] w/scrubber control in lbs/M lbs Steam	1.36E-02
	Hydrogen fluoride (hydrofluoric acid)	85,410	M lbs steam/yr	2.03E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value[c] w/scrubber control in lbs/M lbs Steam	8.66E-04
	Methanol	85,410	M lbs steam/yr	8.78E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	3.75E-02
	Methylene dichloride (Dichloromethane)	85,410	M lbs steam/yr	6.56E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.80E-02
	Methyl isobutyl keytone (MEK, hexone)	85,410	M lbs steam/yr	5.34E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.28E-02
	Naphthalene	85,410	M lbs steam/yr	1.20E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.10E-03
	4-Nitrophenol	85,410	M lbs steam/yr	1.13E-07	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	4.82E-06
	Pentachlorophenol	85,410	M lbs steam/yr	2.75E-07	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.17E-05
	Phenol	85,410	M lbs steam/yr	1.92E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	8.20E-03
	Polychlorinated biphenols	85,410	M lbs steam/yr	9.43E-09	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 sum of 6 PCB Mean EFs in lb/M lbs Steam	4.03E-07
	Propionaldehyde	85,410	M lbs steam/yr	3.02E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.29E-02
	Styrene	85,410	M lbs steam/yr	5.72E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.44E-02
	Tetrachlorethene (perchloroethylene)	85,410	M lbs steam/yr	2.95E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.26E-03
	Toluene	85,410	M lbs steam/yr	2.53E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.08E-03
	1,1,1-Trichloroethane (methyl chloroform	85,410	M lbs steam/yr	6.94E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.96E-03
	Trichloroethene (TCE, trichloroethylene)	85,410	M lbs steam/yr	2.39E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.02E-03
	2,4,6-Trichlorophenol	85,410	M lbs steam/yr	3.31E-07	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.41E-05
	Vinyl chloride	85,410	M lbs steam/yr	2.21E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	9.43E-04
	m-Xylene	85,410	M lbs steam/yr	4.25E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	1.81E-04
	o-xylene	85,410	M lbs steam/yr	1.36E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	5.79E-04
	Xylene (isomers and mixture)	85,410	M lbs steam/yr	6.26E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Mean Value converted to lb/M lbs Steam	2.68E-04
	Dioxins	85,410	M lbs steam/yr	5.06E-11	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Average EF of 7 Dioxin Cmpds in lb/M lbs Steam	2.16E-09
	Furans	85,410	M lbs steam/yr	4.79E-11	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers Table 4.1 Average EF of 10 Furan Cmpds in lb/M lbs Steam	2.04E-09
	Aggregate Non-Metal Boiler HAP	85,410	M lbs steam/yr	**9.01E-03**	lb/M lbs Steam	Aggregate of NCASI TB 1013 & AP-42 Wood-fired Boilers EFs	**3.85E-01**
***Formaldeyhyde = Highest Single Boiler HAP**							

HAP PSEL & PTE DETAIL SHEET (page 2 of 2)

HAP PSEL/PTE Emissions Detail Sheet							Page 2 of 2
EU-Boilers #1 & #2:	Antimony and compounds	85,410	M lbs steam/yr	3.73E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	1.59E-04
	Arsenic and compounds	85,410	M lbs steam/yr	1.33E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber in lb/M lbs Steam	5.69E-04
Metal HAP Emissions	Beryllium and compounds	85,410	M lbs steam/yr	1.61E-07	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	6.87E-06
	Cadmium and compounds	85,410	M lbs steam/yr	5.99E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	2.56E-04
	Chromium and compounds	85,410	M lbs steam/yr	2.94E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	1.26E-03
	Cobalt and compounds	85,410	M lbs steam/yr	2.34E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber in lb/M lbs Steam	9.99E-05
	Lead and compounds	85,410	M lbs steam/yr	4.34E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber in lb/M lbs Steam	1.86E-03
	Manganese and compounds	85,410	M lbs steam/yr	3.00E-04	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Wet Scrubber in lb/M lbs Steam	1.28E-02
	Mercury and compounds	85,410	M lbs steam/yr	2.12E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	9.07E-05
	Nickel and compounds	85,410	M lbs steam/yr	1.58E-05	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	6.76E-04
	Selenium and compounds	85,410	M lbs steam/yr	3.90E-06	lb/M lbs Steam	NCASI TB 1013 Wood-fired Boilers **Metals** Table 4.3 Mean Value Mech Collector in lb/M lbs Steam	1.67E-04
	Aggregate Metal Boiler HAP	**85,410**	**M lbs steam/yr**	**4.20E-04**	**lb/M lbs Steam**	**Aggregate NCASI TB 1013 Wood-fired Boilers Metals Table 4.3 EFs in lb/M lbs Steam**	**1.79E-02**
EU-Boilers: Total HAP	**Aggregate of all Boiler HAP**	**85,410**	**M lbs steam/yr**	**9.43E-03**	**lb/M lbs Steam**	**Aggregate NCASI TB 1013 & AP-42 Wood-fired Boilers Nonmetal + Metal EF in lb/M lbs Steam**	**4.03E-01**
EU-Millwork- Adhesives:	Formaldehyde	156,825	lbs Brown Face Adh/yr	0.0002	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022	1.57E-02
Brown Face Adhesives	Methanol	156,825	lbs Brown Face Adh/yr	0.0006	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022	5.06E-02
LT-75C+FM-260 (50% of	Phenol	156,825	lbs Brown Face Adh/yr	0.0004	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive(LT-75C+FM260) April 2022	3.14E-02
Max 313,650 lbs/yr)	**Aggregate Brown Face Adhesive HAP**	**156,825**	**lbs Brown Face Adh/yr**	**0.0012**	**lbs/lb applied adh mix**	**Aggregate HAP Hexion Caul Plate Test Face Adh (LT-75C+FM260) April 2022**	**9.76E-02**
EU-Millwork- Adhesives:	Formaldehyde	156,825	lbs Brown Face Adh/yr	0.0001	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022	7.84E-03
Brown Face Adhesive	Methanol	156,825	lbs Brown Face Adh/yr	0.0005	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022	3.92E-02
LT-75C+FM-282 (50% of	Phenol	156,825	lbs Brown Face Adh/yr	0.0002	lbs/lb applied adh mix	Hexion Caul Plate Test Face Adhesive (LT-75C+FM282) April 2022	1.57E-02
Max 313,650 lbs/yr)	**Aggregate Brown Face Adhesive HAP**	**156,825**	**lbs Brown Face Adh/yr**	**0.001**	**lbs/lb applied adh mix**	**Aggregate HAP Hexion Caul Plate Test Face Adh (LT-75C+FM282) April 2022**	**6.27E-02**
EU-Millwork- Adhesive:	Formaldehyde	55,350	lbs White Face Adh/yr	0.0002	lbs/lb applied adh mix	Hexion Caul Plate Test White Face Adhesive(6500+M-650Y) July 2020	5.54E-03
White Face Adhesive	Methanol	55,350	lbs White Face Adh/yr	0.0056	lbs/lb applied adh mix	Hexion Caul Plate Test White Face Adhesive(6500+M-650Y) July 2020	1.55E-01
6500+M-650Y	**Aggregate White Face Adhesive HAP EF**	**55,350**	**lbs White Face Adh/yr**	**0.006**	**lbs/lb applied adh mix**	**Aggregate HAP Hexion Caul Plate Test White Face Adh(6500+M-650Y) July 2020**	**1.61E-01**
EU-Millwork- Adhesives:	Formaldehyde	35,100	lbs Finger Joint Adh/yr	7.00E-05	lbs/lb applied adh mix	Hexion Caul Plate Test FingerJoint Adhesive (4720+5025A) May 2022	1.23E-03
Finger-Joint Adhesive	Methanol	35,100	lbs Finger Joint Adh/yr	0.008	lbs/lb applied adh mix	Hexion Caul Plate Test FingerJoint Adhesive (4720+5025A) May 2022	1.36E-01
4720+5025A	**Aggregate Finger-Joint Adhesive HAP**	**35,100**	**lbs Finger Joint Adh/yr**	**0.008**	**lbs/lb applied adh mix**	**Aggregate HAP Hexion Caul Plate Test FingerJoint Adh (4720+5025A) May 2022**	**1.37E-01**
EU-Kilns Five (5) Dry Kilns:	Acetaldehyde	17,415	MBF Doug Fir/yr	0.043	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021	3.74E-01
	Formaldehyde	17,415	MBF Doug Fir/yr	0.0025	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021	2.18E-02
Kiln HAP for Drying	Methanol	17,415	MBF Doug Fir/yr	0.0754	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021	6.57E-01
Douglas Fir (90% of Max	Propionaldehyde	17,415	MBF Doug Fir/yr	0.0009	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021	7.84E-03
19,350 MBF/yr)	Acrolein	17,415	MBF Doug Fir/yr	0.0008	lb/MBF Doug Fir	DEQ AQ-EF09 HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021	6.97E-03
_____	**Aggregate Kiln HAP for Drying Doug Fir**	**17,415**	**MBF Doug Fir/yr**	**0.123**	**lb/MBF Doug Fir**	**DEQ AQ-EF09 Aggregate HAP EF for Doug Fir kiln-dried @200°F Max, Oct. 2021**	**1.07E+00**
	Acetaldehyde	1,935	MBF Cedar/yr	0.055	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021	5.32E-02
Kiln HAP for Drying Cedar	Formaldehyde	1,935	MBF Cedar/yr	0.0073	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021	7.06E-03
(10% of Max 19,350	Methanol	1,935	MBF Cedar/yr	0.2295	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021	2.22E-01
MBF/yr)	Propionaldehyde	1,935	MBF Cedar/yr	**ND**	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar:Propionaldehyde **N**ot **D**etected, Oct. 2021	NA
	Acrolein	1,935	MBF Cedar/yr	**ND**	lb/MBF W. Cedar	DEQ AQ-EF09 HAP EF for W. Cedar: Acrolein **N**ot **D**etected, Oct. 2021	NA
	Aggregate Kiln HAP for Drying Cedar	**1,935**	**MBF Cedar/yr**	**0.292**	**lb/MBF W. Cedar**	**DEQ AQ-EF09 Aggregate HAP EF for W. Cedar kiln-dried @200°F Max, Oct. 2021**	**2.82E-01**
						Total Facility HAP PTE	2.21E+00
						Highest Single Facility HAP: Methanol	**1.30E+00**

1977 BASELINE EMISSION YEAR (BER): SUMMARY OF EMISSIONS

Baseline Emission Rate (BER): 1977 Baseline Year *									
Emisssion Unit	Production/ Throughput	Units	PM TPY	PM_{10} TPY	$PM_{2.5}$ TPY	SO_2 TPY	NOx TPY	CO TPY	VOC TPY
Residual Oil-fired boiler	732,000	gal #6/1977	7.1	7.1	NA	57.5	20.1	1.8	0.3
Two cyclones	500	BDT/1977	0.1	0.1	NA	NA	NA	NA	NA
Lumber Dry Kilns (3)**	4,280	MBF Alder/1977	NA	NA	NA	NA	NA	NA	0.66
	1,070	MBF Cedar/1977	NA	NA	NA	NA	NA	NA	0.41
1977 Total BER			7.2	7.2	NA	57.5	20.1	1.8	1.4

*The 1977 BER (Baseline Emission Rate) was established with the 2009 ACDP renewal and reproduced here.

** 1977 BER VOC emissions from drying Alder & Cedar were revised (reduced) based on ODEQ & EPA R10 Kiln EFs w/2015 ACDP renewal

UPDATED SUMMARY OF BOILER REGULATED POLLUTANT EMISSIONS & EF:

EU-Boilers: Summary of EF Updates

Hours of Operation	8760	hours/yr
Heat Input	11.7	MMBtu/hr

Pollutant	Emission Factor (EF) 4/11/2017 ACDP Addendum #1	EF Units	EF Reference	2017 ACDP Mod EU-Boilers (PTE)	Updated EF	EF units	EF Reference	Updated EF	EF units **	EF Reference	EU-Boilers (PTE)
PM	1.08	lb/MMBtu	4/11/2017 ACDP Addend #1 & 8/28/2018 ST	55.3	0.168	lb/M lb steam	AQGP-010 (Oct 2017); ratioed to allowable 0.14 gr/dscf; 70%CE*	0.14	lb/MMBtu	AQGP-010 EF in lb/MMBtu (Msteam = **1.2 MMBtu)**	7.2
PM10	1.08	lb/MMBtu	4/11/2017 ACDP Addend #1 & 8/28/2018 ST	55.3	0.084	lb/M lb steam	AQGP-010 (Oct 2017); PM_{10} = 50% of PM	0.07	lb/MMBtu	AQGP-010 EF in lb/MMBtu (Msteam = **1.2 MMBtu)**; PM_{10} 70% of PM	3.6
PM2.5	1.08	lb/MMBtu	4/11/2017 ACDP Addend #1 & 8/28/2018 ST	55.3	0.084	lb/M lb steam	AQGP-010 (Oct 2017); $PM_{2.5}$ = 50% of PM	0.07	lb/MMBtu	AQGP-010 EF in lb/MMBtu (Msteam = **1.2 MMBtu)**; $PM_{2.5}$ 70% of PM	3.6
SO2	0.013	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017;Msteam=1.1MMBtu	0.7	0.014	lb/M lb steam	AQGP-010 Sec 13.1.a Dutch Oven Oct 2017 (Msteam=1.2MMBtu)	0.0117	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017 EF in lbs/MMBtu (Msteam=1.2MMBtu)	0.6
NOx	0.042	lb/MMBtu	4/11/2017 ACDP Addend #1 & 8/28/2018 ST	2.2	0.31	lb/M lb steam	AQGP-010 Sec 13.1.a Dutch Oven Oct 2017 (Msteam=1.2MMBtu)	0.26	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017 EF in lbs/MMBtu (Msteam=1.2MMBtu)	13.2
CO	9.74	lb/MMBtu	4/11/2017 ACDP Addend #1 & 8/28/2018 ST	499.1	3.0	lb/M lb steam	AQGP-010 Sec 13.1.a Dutch Oven Oct 2017 (Msteam=1.2MMBtu)	2.50	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017 EF in lbs/MMBtu (Msteam=1.2MMBtu)	128.1
VOC	0.13	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017;Msteam=1.1MMBtu	6.7	0.13	lb/M lb steam	AQGP-010 Sec 13.1.a Dutch Oven Oct 2017 (Msteam=1.2MMBtu)	0.11	lb/MMBtu	AQGP-010 Sec 13.1.a Oct 2017 EF in lbs/MMBtu (Msteam=1.2MMBtu)	5.6
GHG (CO2)	NA	lb/MMBtu	NA	NA	NA		NA	206.36	lb/MMBtu	40 CFR 98, Tbl C-1	10575.1

*** PM factor assumes 70% particulate Control Efficiency (CE) for multiclone and wet scrubber combined.**

**** Assume 1000 lbs steam = 1.2 MMBtu**