Received Date 8-27-20
Application No. 20200013
Updated Part D.1 Permit
Application 8-26-21

EGLE

RENEWABLE OPERATING PERMIT RENEWAL APPLICATION FORM

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.

GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at http://michigan.gov/air (select the Permits Tab, "Renewable Operating Permits (ROP)/Title V", then "ROP Forms & Templates").

PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

SOURCE INFORMATION

SRN	SIC Code	NAICS Code	Existing ROP Number	Section Number (if applicable)
B7302	2493	321219	MI-ROP-B7302-2016c	

Source Name: Weyerhaeuser NR Company

Street Address: 4111 West 4 Mile Rd.

City	State	ZIP Code	County
Grayling	MI	49738	Crawford

Section/Town/Range (if address not available):

Source Description:
Weyerhaeuser NR Company manufactures oriented strand board (OSB) panels commonly used as construction material. The product contains layers of dry wood strands, resin, and wax pressed under high temperature and pressure to form a panel. The process begins with whole logs which are debarked and chipped into strands. The strands are then dried using four rotary dryers that utilize waste wood and/ or natural gas for fuel. Strands are then sorted by size and stored in surge bins until needed. Strands are sprayed with wax and resins, oriented to increase the strength of the finished product then conveyed on to mats. These mats are then fed into the press which applies temperature and pressure. Heat to the press line is from hot oil supplied by two thermal oil heaters. The result is a structural panel. The panels are cut to size and prepared for shipping.

☒ Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.

OWNER INFORMATION

Owner Name	Section Number (if applicable)
Weyerhaeuser Company	

Mailing address (☐ check if same as source address)
220 Occidental Ave. S

City	State	ZIP Code	County	Country
Seattle	WA	98104	King	US

☐ Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

SRN: B7302	Section Number (if applicable):

PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

CONTACT INFORMATION

Contact 1 Name			Title	
Kathi Moss			Environmental Manager	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
		Kathi.moss@weyerhaeuser.com		

Contact 2 Name (optional)			Title	
Mike Bentley			EH&S Coordinator	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
(989) 348-3414		Mike.bentley@weyerhaeuser.com		

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name			Title	
Todd Johnson			Mill Manager	
Company Name & Mailing address (☒ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		
(989) 348-3401		Todd.johnson@weyerhaeuser.com		

Responsible Official 2 Name (optional)			Title	
Company Name & Mailing address (☐ check if same as source address)				
City	State	ZIP Code	County	Country
Phone number		E-mail address		

☒ Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID: A001.1

SRN: B7302	Section Number (if applicable):

PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

Listing of ROP Application Contents. Check the box for the items included with your application.	
☒ Completed ROP Renewal Application Form (and any AI-001 Forms) (required)	☐ Compliance Plan/Schedule of Compliance
☒ Mark-up copy of existing ROP using official version from the AQD website (required)	☐ Stack information
☐ Copies of all Permit(s) to Install (PTIs) that have not been incorporated into existing ROP (required)	☐ Acid Rain Permit Initial/Renewal Application
☒ Criteria Pollutant/Hazardous Air Pollutant (HAP) Potential to Emit Calculations	☐ Cross-State Air Pollution Rule (CSAPR) Information
☐ MAERS Forms (to report emissions not previously submitted)	☐ Confidential Information
☐ Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP	☒ Paper copy of all documentation provided (required)
☒ Compliance Assurance Monitoring (CAM) Plan	☒ Electronic documents provided (optional)
☒ Other Plans (e.g., Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.)	☐ Other, explain:

Compliance Statement	
This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☒ Yes ☐ No
This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP.	☒ Yes ☐ No
This source will meet in a timely manner applicable requirements that become effective during the permit term.	☒ Yes ☐ No
The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.	
If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.	

Name and Title of the Responsible Official (Print or Type)

Todd Johnson, Mill Manager

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Signature of Responsible Official **Date** 8/25/20

SRN: B7302	Section Number (if applicable):

PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

C1.	Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application.	☒ Yes ☐ No
C2.	Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82)	☐ Yes ☒ No
C3.	Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)	☐ Yes ☒ No
	If Yes, a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA?	☐ Yes ☐ No
C4.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the potential to emit (PTE) for criteria pollutant (CO, NOx, PM10, PM2.5, SO_2, VOC, lead) emissions? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers, or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. If No, criteria pollutant potential emission calculations do not need to be included.	☒ Yes ☐ No
C5.	Has this stationary source **added or modified** equipment since the last ROP renewal that changes the PTE for hazardous air pollutants (HAPs) regulated by Section 112 of the federal Clean Air Act? If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. Fugitive emissions must be included in HAP emission calculations. If No, HAP potential emission calculations do not need to be included.	☐ Yes ☒ No
C6.	Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)? If Yes, identify the specific emission unit(s) subject to CSAPR on an AI-001 Form.	☐ Yes ☒ No
C7.	Are any emission units subject to the federal Acid Rain Program? If Yes, identify the specific emission unit(s) subject to the federal Acid Rain Program on an AI-001 Form.	☐ Yes ☒ No
	Is an Acid Rain Permit Renewal Application included with this application?	☐ Yes ☒ No
C8.	Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)? If Yes, identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to the MDEQ, one must be included with the ROP renewal application on an AI-001 Form. If the CAM Plan has been updated, include an updated copy.	☒ Yes ☐ No
	Is a CAM plan included with this application?	☐ Yes ☒ No
	If a CAM Plan is included, check the type of proposed monitoring included in the Plan: 1. Monitoring proposed by the source based on performance of the control device, or	☐
	2. Presumptively Acceptable Monitoring, if eligible	☐
C9.	Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement? If Yes, then a copy must be submitted as part of the ROP renewal application.	☒ Yes ☐ No
C10.	Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable? If Yes, then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form.	☒ Yes ☐ No
☒	Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: **AI-001.Part C**	

SRN: B7302	Section Number (if applicable):

PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☒ Yes ☐ No

If No, go to Part E.

Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).

Emission Unit ID	Emission Unit Description	Rule 212(4) Citation [e.g. Rule 212(4)(c)]	Rule 201 Exemption Rule Citation [e.g. Rule 282(2)(b)(i)]
EUGENERAC	Generac Guardian Series 22kW, 99,000 BTU/hr., <50HP, < 10-liter displacement	212(4)c	282(2)(b)(i)
EUCOMPRESSOR	Sullivan and Palatek, D900-HAF, 305 HP (776,225 BTU) back-up air compressor	212(4)(g)	285(2)(g)
EUSAQ	STJ Tubejet 378 Filter, 30,000 acfm, 125HP, 1785 RPM Balder Motor, Vertical discharge 40"x14' 4" no loss rain stack. 16' 7 5/8" above	212(4)(h)	285(2)(f)
	Revised Part D.1 Permit Application sent 8-26-21 removing EUGENERAC & EUCOMPRESSOR		
	EUGENERAC & EUCOMPRESSOR	are part of the ROP	under NSPS
	they should not have been included in	Part D	

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID:

SRN: B7302	Section Number (if applicable):

PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to **all** emission units and **all** applicable requirements in the existing ROP.

E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP? If Yes, identify changes and additions on Part F, Part G and/or Part H.	☒ Yes ☐ No
E2. For each emission unit(s) identified in the existing ROP, all stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were not reported in the most recent MAERS reporting year? If Yes, identity the stack(s) that was/were not reported on applicable MAERS form(s).	☒ Yes ☐ No
E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI? If Yes, complete Part F with the appropriate information.	☐ Yes ☒ No
E4. Have any emission units identified in the existing ROP been dismantled? If Yes, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form.	☐ Yes ☒ No

Comments:

E.2 SV-101 form attached with SVSAQ information

SVSAQ Applicable requirements:
R 336.1225
40 CFR 52.21© and (d)
R 336.2803
R 336.2804

☐ Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: **AI-**001

SRN: B7302	Section Number (if applicable):

PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. If No, go to Part G. ☐ Yes ☒ No

Permit to Install Number	Emission Units/Flexible Group ID(s)	Description (*Include Process Equipment, Control Devices and Monitoring Devices*)	Date Emission Unit was Installed/ Modified/ Reconstructed

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. ☐ Yes ☐ No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. ☐ Yes ☐ No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identity the stack(s) that were not reported on the applicable MAERS form(s). ☐ Yes ☐ No

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. ☐ Yes ☐ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**

SRN: B7302	Section Number (if applicable):

PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. ☒ Yes ☐ No

Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.

Origin of Applicable Requirements	**Emission Unit Description – *Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices***	**Date Emission Unit was Installed/ Modified/ Reconstructed**
☐ Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation		
☐ Rule 287(2)(c) surface coating line		
☒ Rule 290 process with limited emissions	EUSAQ Strander Air Quality baghouse. Provides particulate removal from the Strander systems. Daily pressure drop checks and daily system inspections are recorded and kept on file. Emission calculations are attached under Part C.	8/21/2017

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

SRN: B7302	Section Number (if applicable):

PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below.	☒ Yes	☐ No
H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP.	☒ Yes	☐ No
H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP.	☒ Yes	☐ No
H4. Does the source propose to add new state or federal regulations to the existing ROP? If Yes, on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify each state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement.	☒ Yes	☐ No
H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If Yes, list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP.	☐ Yes	☒ No
H6. Does the source propose to add, change and/or delete **source-wide** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below.	☐ Yes	☒ No
H7. Are you proposing to **streamline** any requirements? If Yes, identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below. Redundant condition under the same EU – see attached A1 form and ROP Mark-up	☒ Yes	☐ No

SRN: B7302	Section Number (if applicable):

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H8. Does the source propose to add, change and/or delete **emission limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

See attached AI-001.Part H and the ROP mark-up for details.

H9. Does the source propose to add, change and/or delete **material limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

Change II.Material Limits(1) from 0.5% to 0.05% sulfur maximum. See attached AI-00. Part H and ROP mark-up for details.

H10. Does the source propose to add, change and/or delete **process/operational restriction** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

See attached AI-001.Part H form and the ROP mark-up for details.

H11. Does the source propose to add, change and/or delete **design/equipment parameter** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

See attached AI-001.Part H form and the ROP mark-up for details

H12. Does the source propose to add, change and/or delete **testing/sampling** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

H13. Does the source propose to add, change and/or delete **monitoring/recordkeeping** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

See attached AI-001.Part H and the ROP mark-up for details.

H14. Does the source propose to add, change and/or delete **reporting** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

SRN: B7302	Section Number (if applicable):

PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. ☒ Yes ☐ No

ROP - C. Emission Unit Conditions, Emission Unit Summary Table. See attached A1-001.PartH and ROP mark-up for details

ROP – Appendix 7.D. Emission calculation for FGWOODHANDLING to compensate for added system.

H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below. ☐ Yes ☒ No

☒ Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-**PartH

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RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

	SRN:	Section Number (if applicable):

1. Additional Information ID
AI-

Additional Information

2. Is This Information Confidential? ☐ Yes ☐ No

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RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: B7302	Section Number (if applicable):

1. Additional Information ID
AI-001.PartA

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Part A General - General

Source Description:
Changed all references to "flakes" to "strands" and reorganized process description to match material flow.

Owner Information:
Corporate headquarters (owner) address changed from Federal Way, WA to Seattle, WA on 7/12/2016

Contact Information:
Added Mike Bentley, EH&S Coordinator as a second contact
Changed Responsible Official to Todd Johnson, Mill Manager

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RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: B7302	Section Number (if applicable):

1. Additional Information ID
AI-001.Part C

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Part C, Source Wide Requirements

C.1 EUCOMPRESSOR and EUGENERAC (MAERS forms attached)
C.4 EUCOMPRESSOR emission calculations attached in FGRICEMACT Calcs.xlsx
C.4 EUGENERAC emission calculations attached in FGRICEMACT Calcs.xlsx
C.4 Updated emission calculations attached in FGWOODHANDLING Emission Calculation.xlsx
C.8 Emission units subject to CAM:
EUDRYER1
EUDRYER2
EUDRYER3
EUDRYER4
EUCOEN

The facilities CAM plan was last updated on 2/19/2019, submitted and approved by then MDEQ on 03/05/2019. No changes to the plan have been made since that date. Therefore, a copy of the plan is not included with the application packet.

C.9 Facility plans listed below are attached:
SSMAP - Startup, Shutdown, Malfunction Abatement Plan
RICE MACT Operations and Maintenance Manual
CEMS QAQC Weyerhaeuser Final
Monitor QA Plan Continuous Opacity Monitor Dryer Exhaust Stack
Temperature Monitor QC Program

C.10 Exempt Units
EUFURNACE3 - A Bryan boiler was installed with the new press in 2018 to suppliment building heat. The unit is a natural gas fired, 381,750 BTU/hr furnace. R 336.1212(4)(b), R 336.1282(b)(i)

EUSAQ - Strander air quality baghouse, Sky Tubejet dust collector, 4460 ft2, 30,000 ACM measured flow. R336.1290

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RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

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SRN: B7302	Section Number (if applicable):

1. Additional Information ID
AI-001.Part H

Additional Information

2. Is This Information Confidential? ☐ Yes ☐ No

H.8: EUIBW, I. Emission Limit(s). Change time period from 3-hour rolling to 3-hour average for both NOx and CO.
H.8. FGWOODHANDLING, I.Emission Limit(s). Change PM pph to 1.87 and tpy to 8.2
H.9: FGDIESEL-ENGINES, II.Material Limits(1) change from 0.5% to 0.05% sulfur maximum.
H.10: EUCOEN, III.7. Redundant condition to III.6.a.viii
H.10: FGDIESEL-ENGINE III: Change all references from FGDIESEL-ENGINES to FGRICEMACT and added "emergency" to differentiate from non-emergency engines added during this renewal
H.10: FGDIESEL-ENGINE III.6: Add citations 40 CFR 63.411(a). Subpart IIII, 40 CFR 63.4233(c), Subpart JJJJ
H.11: FGDIESEL-ENGINE IV: Change all references from FGDIESEL-ENGINES to FGRICEMACT
H.13: EUIBW, VI.3: change "based on a 3-hour rolling time period" to monthly.
H.13: FGWOODHANDLING, VI.4. Change verbiage as noted in mark-up. Similar to Arauco FGMTRLHNDL in PTI 9-16B
H.13: FGDIESEL-ENGINE: Change all references from FGDIESEL-ENGINES ot FGRICEMACT
H.15: Add SVSAQ to the table under VIII. Stack/Vent Restrictions. See ROP markup.
H.16: Other Requirements:
Pg. 14. EUPRESSLINE: Change installation date. Date in existing ROP was the PTI approval date, not the installation date.
Pg. 15. EUCOEN: Change the MMBTU/hr on natural gas from 40 to 60 MMBTU/hr. Have not found when this was added but the BTU value in the table is not correct for this unit.
Pg. 15 EUDRYFUEL: System has 2 baghouses and both replaced existing 12/15/2005 under 285(d).
Pg. 15. EUSAQ: (Stranding Air Quality) baghouse. Add to table, description, installation date, and Flexible Group ID.
Pg. 15. EUDIESELHOTOIL: Flexible Group ID change from FGDIESEL to FGRICEMACT.
EUEMERGENCYGEN: Flexible Group ID change from FGDIESEL to FGRICEMACT.
EUFIREPUMP: Flexible Group ID change from FGDIESEL to FGRICEMACT.
Pg. 16 Change EUBLENDVENT to EUMDI
Pg. 29. EUCOEN, IX.Other Requirements. Remove all of IX.1. Redundant conditions to those listed in III.6 on page 28. Redundant conditions to those listed in III.6 on page 28.
Pg. 32 D. Flexible Group Summary Table: Add stranding and EUSAQ to the FGWOODHANDLING description, EUSAQ to the Associated Emission Unit IDs, and change EUBLENDVENT to EUMDI.
Pg. 32.D. Flexible Group Summary Table: Change FGDIESEL-ENGINES ID to FGRICEMACT and add EUGENERAC and EUCOMPRESSOR to the Associated Unit IDs.
Pg. 32. D. Flexible Group Summary Table: Change Flexible Group Descriptions for FGDIESEL-ENGINES per ROP markup.
Pg. 39. FGWOODHANDLING: Add EUSAQ to the Emission Unit list. Also change EUBLENDVENT to EUMDI
Pg. 39. Change EUBLENDVENT in Emission Limits Table to EUMDI.
Pg. 41. VIII.Stack/Vent Restrictions: Change SVBLENDVENT to SVMDI
Pg. 41 - 46 FGDIESEL-ENGINES: Change Flexible Group title in all sections to FGRICEMACT and add verbiage in the Discription for EUGENERAC and EUCOMPRESSOR.
Pg. 46 IV.2: Added EUCOMPRESSOR and citations
Pg. 47. FGDIESEL-ENGINES: add "IIII, JJJJ" to IX.1
Pg. 54. FGWOODHANDLING: Updated airflow in calculation for current permitted baghouse systems and added individual flows. .

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

EFFECTIVE DATE: March 8, 2016

REVISION DATES: November 15, 2016, December 1, 2017, April 5, 2019

ISSUED TO:

Weyerhaeuser NR Company

State Registration Number (SRN): B7302

LOCATED AT:

4111 West Four Mile Road, Grayling, Crawford County, Michigan 49378

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-B7302-2016c

Expiration Date: March 8, 2021

Administratively Complete ROP Renewal Application Due Between:
September 8, 2019 and September 8, 2020

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-B7302-2016c

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

Shane Nixon, Cadillac District Supervisor

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RICE MACT: Operations and Maintenance (O&M) Plan

The purpose of this O&M Plan is to document the means by which the Weyerhaeuser Grayling OSB facility manages the site's stationary diesel-powered engine and emergency engines as demonstrated by way of the following operating practices and maintenance procedures.

Operations

- Limit the engine's time spent at idle during start-up and the engine's start-up time to less than 30 minutes.
- Document the annual engine hours of operation and the purpose of use for each hour operated (i.e., maintenance checks and readiness testing, conditional non-emergency use). Note that there is no time limit on the use of the engine in emergency situations.
- Comply with all applicable CI RICE MACT requirements for Title V permit certification purposes.

Documentation of Hours

- A non-resettable hour meter is installed on each on-site stationary RICE
- Hour meter readings are recorded in the log sheet for each RICE unit every time the engine is shut down after use and at the beginning of each month. Reasons for engine run time are recorded at the same time. The diesel logs are collected quarterly and digital copies are kept in: S:\Environmental\Section 3 Air\500 Reports\Air quality Reports\Air Emissions\Diesel Logs
- Compiled yearly hours for each RICE unit with reasons for use are recorded in: S:\Environmental\Section 3 Air\500 Reports\Air Quality Reports\AirEmissions\Airsum

Maintenance

- Assuming the engine operates less than 500 hours/year; change the oil and filter annually, inspect the air cleaner and all hoses and belts annually and replace as necessary. Document each of these annual activities. If the engine operates more than 500 hours during the year then change the oil and filter every 500 hours.
- Limit the maintenance checks and readiness testing of the engine to less than 100 hours per year (not more than 50 of these hours can be dedicated to conditional non-emergency use).
- Keep records of the maintenance conducted on the engine in order to demonstrate that it is being operated and maintained according to the plant's maintenance plan (i.e., preventative maintenance system).
- Conform to all applicable instructions in the Operation and Maintenance Manuals. Copies of these manuals are kept at the Grayling facility.
- Immediately report any failure to perform, on the schedule required, the changing of the oil and the filter and inspection of the air cleaner and the hoses and the belts.

Documentation of Maintenance

- Preventative Maintenance (repetitive) preventive maintenance plans are identified by SAP system number and listed with the information for each RICE unit in this document.

Detroit Diesel Emergency Fire Pump Engine/EUFIREPUMP

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start, Fluid Check, and Inspection: PM# 1093045
Annual Service & Inspection: PM# 1113251
Two Year Battery Replacement: PM# 1111774

Name:	Detroit Diesel Emergency Fire Pump			
Mfg./Install Date:	Feb 1981	**Air/Fuel Ratio:**	32.24	
Serial No.:	6A0414479	**HP:**	281	
Model No.:	6-71 Detroit Diesel	**Injector:**	N95	
Fuel Consumption:	17.11 GPH at 100% rated load, NA for 50% rated load			
	.376 lb./hp/hr. at 2600 RPM			
Displacement:	426 cubic inches			
Exhaust:	GoogleEarth Coordinates: 44°35’35”N, 84°41’40”W 6 1/2" opening directed at the ground (angled downward at 45 degree) 880 feet west of "21" 55' south of "K" (noted in Tom Mosher's notes from 1994 permit documentation in archives- site plan coordinates K and 21)			
Exhaust Temp:	780° F	**Cylinders:**	6	
Exhaust Flow:	2090 CFM	**No. of Cycles:**	2 T	
Emission Data:	**Gm/hr.**	**Gm/bhp/hr.**	**Lb/hr**	**PPM**
HC	74.05	0.23	0.16	85
NOx	3624.06	11.4	7.99	1266
CO	4896.3	15.4	10.79	2810
CO2	181894.1	571.99	401	66429.67
SO2	542.51	7.71	1.2	136.21
PM	184.44	0.58	0.41	

Cummins Diesel Powered Emergency Hot Oil Circulating Pump Engine/EUDIESELHOTOIL

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start: PM# 1115267

Two-week Fluid Check and Inspection: PM# 1112855

Annual Service & Inspection: PM# 1094213

Two-year Battery Replacement: PM# 1111773

Name:	Cummins Emergency Diesel Hot Oil Pump		
Mfg./Install Date:	Mfg. 2/12/2002 Install: 7/6/2006	**Air/Fuel Ratio:**	No information
Serial No.:	68009179	**HP/kW:**	85/63
Model No.:	Cummins Diesel B3.3	**Injector:**	Bosch-Zexel VE direct injection. C6205113101
Fuel Consumption:	.345 lb./hp/hr. at 1400 RPM		
	.376 lb./hp/hr. at 2600 RPM		
Displacement	3.3L (199 cu. In.)		
Exhaust:	GoogleEarth Coordinates: 44°35'30"N, 84°41'23"W Vertically through a 3 1/2" opening covered with counter balanced rain cap 12' above grade and 1 1/2' from outside wall, 290' east of "21" 495 south of "K" (noted in Tom Mosher's notes from 1994 permit documentation in archives- site plan coordinates K and 21)		
Exhaust Temp:	970° F	**Cylinders:**	4
Exhaust Flow:	475 CFM	**No. of Cycles:**	In line 4 cycle
Emission Data:	**Gal./bhp/hr**		
HC	**0.8**		
CO	**4.0**		
NOx	**6.2**		
PM	**0.5**		

Caterpillar Emergency Stand-by Diesel Generator/EUEMERGENCYGEN

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start, Fluid Check, and Inspection: PM# 1115267

Annual Service/Inspection: PM# 1112833

Two-year Battery Replacement: PM# 1115133 *Can be 3-year per manual*

Name:	Caterpillar Emergency Stand-by Diesel Generator		
Mfg./Install Date:	~ 1981 install	**Air/Fuel Ratio:**	No information
Serial No.:	85Z03713 2W1742	**HP/kW:**	306/228
Model No.:	3306B Caterpillar	**Injector:**	
Fuel Consumption:	19.2 gal./hr. at 100% rated load		
	10.0 gal./hr. at 54% load		
Displacement:			
Exhaust:	GoogleEarth Coordinates: 44°35'30"N, 84°41'23"W Vertically through a 6" opening covered with counter balanced rain cap 10' above grade and 1 1/2' from outside wall. 295 feet east of "21" 495 south of "K" (noted in Tom Mosher's notes from 1994 permit		

	documentation in archives- site plan coordinates K and 21)		
Exhaust Temp:		**Cylinders:**	6
Exhaust Flow:		**No. of Cycles:**	
Emission Data:			

Cummins Diesel Powered Air Compressor Engine/EUCOMPRESSOR

This Cummins diesel engine provides power for a portable D900-HAF Sullivan and Palatek air compressor. The air compressor's primary purpose is to provide back-up to the mill's compressed air system.

NSPS, Subpart IIII, 40 CFR 89.112 (emission certification)

Maintenance Procedures

PMS (250 hour or 3 months, 500 hour or 6 months, 1000 hour or 1 year, 2000 hours or 2 years)

Weekly Test Start, Fluid Check, and Inspection: PM# 112748

Biennial and Annual Service & Inspection: PM# 1117617

Two-year Battery Replacement: PM# 1115134 (not listed in the engine manual)

Name:	Cummins Diesel Powered Air Compressor Engine		
Mfg./Install Date:	9/26/2014/	**Air/Fuel Ratio:**	
Serial No.:	73745288	**HP/BTU:**	305 HP/776,225 BTU/227.4 kw
Model No.:	QSC 8.3 (Tier 3)	**Injector:**	ECM
Fuel Consumption:	167 mm3/stroke, #2 diesel at < 5% sulfur content		
	10.06 gph @ 1900 RPM (max load)		
	7.41 gph @ 1400 RPM (idle)		
Exhaust:	GoogleEarth Coordinates: 44°35'32"N, 84°41'21"W Turbo exhausts vertically through a 3 1/2" opening covered with counter balanced rain cap 7' above ground.		
Exhaust Temp:	900° F	**Cylinders:**	6
Exhaust Flow:	2097 CFM	**No. of Cycles:**	4
Emission Data:	**FEL EPA G/KW-h**	**Displacement:**	8.3 liter (506 in^3 total displacement)
CO	3.5		
NMHC	0.19		
NOx	0.40	Mfg. certified below FEL	
PM	0.02	Mfg. certified below FEL	

Generac Emergency Generator/EUGENERAC

NSPS, Subpart JJJJ (For Gasoline/**Propane**/LPG fueled units)

Maintenance Procedures

PM 1147983 1-year PM completed per operating manual

Name:	Generac Emergency Stand-by Generator (2 cylinder) – Gate House		
Mfg./Install Date:	5/16/17 ***	**Air/Fuel Ratio:**	
Serial No.:	3001637995 (Unit) 3001644197 (Engine)	**HP/kW:**	29.5/22
Model No.:	G0070420	**Injector:**	
Fuel Consumption:	3.6 gal./hr. at 100% rated load		
	2.1 gal./hr. at 50% rated load		
Displacement:	2.4L		
Exhaust:	GoogleEarth Coordinates: 44°35'41"N, 84°41'36"W		
Exhaust Temp:	482C/900F	**Cylinders:**	2
Exhaust Flow:	165 CFM	**No. of Cycles:**	4
Emission Data:	Emission Warranty		

**** Mfg./Install Date: Project complete date in PACE*

Record of Revisions

Revision Date	Description	Sections Affected	Revised By:
3/24/2020	Added GoogleMap Coordinates for engines and updated Generac Info	All	Kathi Moss
11/11/19	Added Permit (EU) Emission Unit Names to engines	Engine Descriptions	Kathi Moss
4/5/2019	Updated to include mfg/install year, added tables, compressor description, & changed PM numbers	All	Kathi Moss
8/18/2015	Added Cummins air compressor diesel	Engine descriptions	Faith Dandois
5/7/2014	Updated info on Cummins and Caterpillar	Engine descriptions	Faith Dandois
8/9/2013	Revised for SAP conversion	PM numbers	Faith Dandois

5/23/2013	Created	All	Faith Dandois

Quality Assurance / Quality Control (QA/QC) Plan

Continuous Opacity Monitoring System at Dryer RTO Exhaust Stack

Weyerhaeuser NR Company
Grayling OSB
4111 W. Four Mile Rd.
Grayling, MI 49738

This COMS QA/QC Plan has been developed and submitted to the Environmental Great Lakes and Energy for review and approval.

Weyerhaeuser

4111 WEST FOUR MILE ROAD

GRAYLING, MICHIGAN 49738

STARTUP, SHUTDOWN, AND MALFUNCTION ABATEMENT PLAN (SSMAP)

REVISION 19
MARCH 6, 2019

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1.0 GENERAL

1.1 DOCUMENT OBJECTIVES

This plan covers the general operations, documentation and reporting procedures for startup, shutdown, and malfunction (S/S/M) events of air emission sources, control devices, and monitoring systems at the Weyerhaeuser facility in Grayling, Michigan. The objectives of this plan are to:

a) Meet the S/S/M plan requirements found in the National Emission Standard for Hazardous Air Pollutants for the Plywood and Composite Wood Products (PCPW) found in 40 CFR 63 Subpart DDDD. This is also known as the PCPW MACT standard.
b) Meet the malfunction abatement plan and emission minimization for startup and shutdown plans per Rules 911 and 912 of the Michigan Air Pollution rules.
c) Ensure that process equipment, air pollution control equipment, and monitoring equipment is operated in a manner consistent safety and with good air pollution control practices to minimize emissions during startup, shutdown, and malfunction events.
d) Ensure that effective preventive maintenance procedures for source and control devices are in place to minimize any malfunctions.
e) Ensure that the necessary critical spares are available for timely repair of control devices and monitoring systems.
f) Assure proper documentation and follow-up on equipment inspections, compliance reporting, malfunction notification, and semiannual S/S/M reporting requirements consistent with the PCPW MACT standard.

1.2 AFFECTED PROCESSES

The Weyerhaeuser Grayling facility converts raw logs into an OSB (Oriented Strand Board) structural wood panel. The following processes at the facility have emission limitations in the PCWP MACT standard and/or the Renewable Operating Permit (ROP) or "permit":

Emission Unit ID	Source	Emission Limit in PCPW MACT?	Emission Limit in ROP?
FGDRYERS pg. 6	Rotary dryers with WESP, RTO and CEMS	Yes	Yes
FGDRYERS pg. 8	Coen dust/gas burner	Yes*	Yes
EUIBW pg. 9	IBW gas burner	No	Yes
EUPRESSLINE pg. 17	Press with biofilter and CEMS	Yes	Yes
EUPAINTBOOTH pg. 24	Paint Booth	No**	Yes
FGWOODHANDLING pg. 24	Six (6) wood handling systems with baghouses	No	Yes
FGDIESELENGINES NA	3 emergency diesel engines	No	No

* Coen burner on the thermal oil heater normally exhausts to dryers, so emissions are limited along with dryers unless bypassed through TOH stack when burning natural gas.
**Paint booth is required to use only non-HAP coatings as defined in 40 CFR 63.2292

This plan is required to identify and address situations where emissions may be in excess of the regulated limits during startup, shutdown, and malfunction events. Therefore, all of the above

processes are addressed in this plan, whether subject to the S/S/M requirements of the PCWP MACT standard or only subject to emission limits under the ROP.

1.3 COMPANY ORGANIZATION

The Weyerhaeuser Grayling facility operates (24) hours per day (7) days per week. The facility is operated by (4) Teams working on a rotating shift basis. Each team is staffed with trained operators and maintenance members to assure proper equipment operation, including startups and shutdowns, and quick response to any malfunctions. The Maintenance Manager has overall responsibility for overseeing the inspection, maintenance, and repair of equipment.

1.4 COMPLIANCE COMPUTER

All data collection required under the permit and PCWP MACT is performed by a personal computer control system located in dryer control. This system utilizes a dedicated PLC, which interfaces directly with field sensors and monitors. This system displays compliance variables, calculates exceedances and stores data. The system also provides operator interface to document exceedances, monitor process variables and compliance alarms and project compliance process and compliance data.

The compliance computer has a 2-hour battery backup in case of power failure.

1.5 RECORDKEEPING

All documents required by this SSM Plan, and any other documents required by the Operating Permit will be kept for (5) years and made available to The U.S. Environmental Protection Agency (EPA) and/or the Michigan Department of Environmental Quality – Air Quality Division (MDEQ-AQD) upon request.

All records of inspections shall include date and time and status of equipment. Start-ups, Shutdowns and Malfunctions shall be documented with duration and corrective actions needed.

1.6 REPORTING REQUIREMENTS

Reference: 40 CFR 63.10(d)(5) and Michigan Rule 912

Reporting requirements associated with the SSM plan to the environmental agencies EGLE (Michigan Department of Environmental, Great Lakes, and Energy) – Air Quality Division and U.S. EPA) are as follows:

1. Annual reports are due to the U.S. EPA for PCWP MACT-related S/S/M events. Annual deviations are also due for ROP-related items. Semiannual and annual reports are due to the Michigan EGLE. These reports will document if an S/S/M event occurred and the procedures in the S/S/M plan were not followed, but an exceedance of an emission limitation in the MACT standard (or the ROP) did not occur.
2. If the procedures outlined in this S/S/M plan are not followed and there is an exceedance of the PCWP MACT emission standard, then a record of actions taken will be documented and a report made within (2) business days after commencement of actions inconsistent with the plan. A written follow-up report will be submitted within 7 working days after the end of the event. This report will include probable cause, duration, corrective action taken, and steps taken to prevent a reoccurrence.
3. If the procedures outlined in this S/S/M plan are followed and there is an exceedance of an ROP emission limit for more than 2 hours, then immediate reporting is required within two (2) working days with a written follow-up report within 7 working days. This report

will include probable cause, duration, corrective action taken, and steps taken to prevent a reoccurrence.

2.0 DRYERS AND ENERGY (FG Dryers)

2.1 GENERAL DESCRIPTION

The facility uses four (4) triple pass rotary strand dryers to dry the wood strands. These dryers are equipped by a cyclone for each dryer to remove the strands and collect particulate matter. All 4 dryers exhaust through a 5-field wet electrostatic precipitator ("WESP") and a 2-unit regenerative thermal oxidizer ("RTO") and exit one common RTO stack.

The primary heat sources for the dryers (4) MEC wood dust/natural gas suspension burners (1 for each dryer). Additionally, the waste heat from the Coen wood dust/gas burner for a thermal oil heater ("TOH1") also exhausts to the dryers. TOH1 may exhaust to a separate stack provided that it is being fired on gas and not wood. The dryer and energy area also includes a separate gas fired thermal oil heater manufactured by International Boiler Works (IBW). This source is gas fired only and exhausts through a dedicated stack (TOH2). (The IBW is not part of the PCWP MACT category.)

The drying process and associated energy systems are highly automated and numerous process variables are monitored continuously by the control room operators.

The RTO stack is equipped with a continuous emission monitoring system (CEMS) for Volatile Organic Compounds ("VOC's"), opacity, and carbon monoxide ("CO").

In general, emissions of NOx, CO and PM originate from the heat sources that serve the dryers. The drying process itself is the primary source of VOC's, but particulate matter and CO emissions also originate from the drying process.

2.2 REGULATORY REQUIREMENTS

There are numerous emission limits in the permit for the dryers. Additionally, the PCWP MACT standard contains emission limits and operating requirements.

The IBW is subject to Boiler MACT and the Coen burner is subject to Boiler MACT when fueled by natural gas and venting to atmosphere. Requirements include recording the type of fuel burned (63.7540), prescribed burner tune-up scheduling and reporting (63.7540(a)(10), and work practices as defined in part 63 Subpart DDDDD, table 3. These MACT standards have been incorporated into the current ROP.

2.2.1 Non-MACT Emission Limits

The non-MACT regulatory limits in the permit for the dryer systems exhausting through the RTO stack that are continuously monitored are as follows:

Parameter	Limit	Averaging Time
Opacity	20%	6-minutes
VOC	18.6 lb/hr	30 day rolling
VOC	81.5 tons per year	12 month rolling
CO	343.7 lb/hr	1-hour
CO	147.3 lb/hr	24-hour

The PCWP MACT standard also includes an operating requirement for continuous compliance with the minimum RTO combustion chamber temperature (as determined from testing).

Additionally, the ROP imposes particulate matter limits and specific organic emission limits for the dryers in which compliance is demonstrated by periodic stack testing. Past experience has indicated that compliance with the continuously monitored emissions above indicates compliance with the other parameters.

There are also oxides of nitrogen (NOx) and CO emission limits for the two TOH stacks and a general prohibition for TOH1 to utilize wood while exhausting through the TOH1 stack. Compliance is verified through stack testing.

Emissions of opacity (and particulate matter) are dictated primarily by the proper operation of the WESP. Likewise, emissions of VOC and CO are dictated primarily through the proper operation of the RTO. Actual process parameters for the heat sources and the dryers themselves have only a minor effect on these emissions when the control equipment is properly operated. The general requirement to have the control equipment operating prior to the startup of the processes ensures emissions are minimized during startup and shutdown.

2.2.2 MACT Requirements

Removal of 90 percent Total Hydrocarbons (THC) is the selected compliance option for this unit to meet the PCWP MACT standard. The PCWP MACT also includes an operating requirement to demonstrate continuous compliance of keeping the minimum RTO combustion chamber temperature above the temperature during performance testing.

The dryer emissions are allowed to bypass the control equipment up to 3% of annual operating time during routine maintenance. During these times, attention to process equipment operating parameters is critical to minimizing emissions. Dryer emission bypass during routine maintenance is not an SSM event.

2.3 CRITICAL MONITORED VARIABLES

The dryer and energy systems are highly controlled and automated, with many variables monitored on a continuous basis for production, quality and environmental compliance purposes. The key monitored variables of the dryer and energy systems, with the associated control equipment, for environmental compliance purposes are as follows:

Equipment	Variable Monitored	Normal Range/Reading
TOH Burners (both Coen and IBW)	Thermal oil temperature, stack used	TOH1 on wood and ducting through dryers. TOH1 on gas only if using TOH1 stack. Oil temperature ranges between 100° and 500°F with 470°F set point.
WESP	Field Voltage for all 5 fields	All 5 fields energized, typical voltage range 50-60 kilovolts
WESP	Duct sprays	1200 - 1600 gallons per minute.
RTO	Combustion chamber temperature (Required by PCWP MACT)	1424° minimum temperature determined during performance testing. Sensors meet requirements of 40 CFR 63.2269(b) may change w/ test results.
RTO	Inlet static pressure	Negative
Entire system exhausting through RTO stack	CO, VOC, opacity, flow and RTO Combustion Temperature	See section 2.2

2.4 COEN WOOD/GAS BURNER

2.4.1 STARTUPS AND SHUTDOWNS

Start-up and shut-down sequences of the Coen burner are automatic. The Coen starts only on gas and undergoes an automatic purge cycle and warm up prior to wood being introduced. Shutdown of the unit is done simply by disabling wood feed to the burner. A gas pilot continues and the burner must be manually disabled if shutting the burner completely down.

The Coen burner exhausts normally pass through the dryer systems, but may vent to atmosphere via the TOH stack when the dryers are in startup or shutdown mode. To minimize emissions, the Coen burner will not fire wood unless the TOH stack is shut, the exhausts pass through the dryer, and the WESP is operational. The Coen will automatically shut down if venting through the TOH stack while firing wood.

2.4.2 MALFUNCTIONS

Emissions from the Coen burners are minimized during dryer malfunctions when heat to the dryer is not needed by changing to gas fuel and venting to the atmosphere. The flue gases from the Coen burner must vent through the dryers, including the WESP, when burning wood. When the natural gas burners are the sole source of heat the exhaust gases may be vented to either the WESP or the TOH1 Stack. The control system is set so that TOH1 will not exhaust to the TOH1 stack when firing wood.

Malfunctions of the Coen and corrective actions are as follows:

Malfunction	Corrective Action	Additional Notes
Flame Character – poor color, flickering	Adjust fuel bias. If not corrected, shut down burner and check fuel scroll for plugging	
WESP not operational while firing wood	Exhaust through TOH stack and cease wood firing	TOH stack will open automatically and an automatic timer will shut down wood firing if the TOH stack is open for 15 minutes

2.4.3 PREVENTATIVE MAINTENANCE

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
Flame Condition	Once per shift	DSE Shift Summary
Verify standard operating condition	Once per shift	DSE Shift Summary
General inspection and lubrication	Monthly	SAP electronic tracking system

The Coen Burner is not considered to be an essential piece of equipment, therefore, there are no critical spare parts currently managed for it. The unit will remain out of service in the event of a breakdown until any needed parts are obtained and repairs completed.

2.5 IBW THERMAL OIL HEAT EXCHANGER (EUIBW):

2.5.1 STARTUP AND SHUDOWNS

The startup and shutdown of the IBW is straightforward, controlled by a toggle switch in the process controls.

2.5.2 MALFUNCTIONS

Malfunction	Corrective Action	Additional Notes
Flame Character – poor color, flickering	Adjust fuel bias; if this does not correct, then recalibrate excess air/fuel ratio. Shut down burner and cease strand feed to dryer if problem persists.	Consult with instrument team if recalibration required by the next working day.

2.5.3 PREVENTIVE MAINTENANCE:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
Flame Condition	Once per shift	DSE Shift Summary
General inspection and lubrication	Weekly	SAP electronic tracking system

The critical spares are those that control or calibrate the gas burner excess air setting. (See Appendix A)

2.6 WOOD STRAND DRYERS WITH SUSPENSION BURNERS (FGDRYERS):

2.6.1 STARTUPS AND SHUTDOWNS

Start-up of the entire Wood Strand Dryer system begins when; 1) the RTO combustion chamber reaches the minimum operating temperature (established during performance testing), 2) the North and South RTO abort gates are closed, and 3) heat is applied to one of the four dryers. Start-up of the Wood Strand Dryer system ends when strands are fed to the dryer. Shut down of the system begins when heat to the dryer is removed and ends 30 minutes after wood feed to the dryer is stopped. Under normal conditions, dryer start up is only initiated after the WESP and RTO control equipment have been started. Likewise, the WESP and RTO remain on line until the system shutdown is complete. Therefore, emissions in excess of the PCWP MACT standards are not anticipated.

Individual dryers may startup or shutdown while the other dryers are operational with the WESP and RTO on-line. Individual dryer startups and shutdowns generally do not affect the ability of the dryer system to maintain compliance with the emission limits with the control equipment operating.

The detailed startup sequence for all (4) dryers are detailed in ESOP-DS-010 Dryer Startup. The most critical steps for emission minimization during startup are as follows:

1) All fans are operating, WESP is energized, and RTO is operating at proper temperature prior to introducing strands to the dryer and burning wood fuel in suspension burners (or in TOH1 if ducting through dryers).

2) Continuous emission monitoring system is operating and recording upon initiation of fuel feed into the suspension burners and/or TOH1 if ducting through dryers.

3) Wood strands added to dryer once the dryer outlet temperature reaches a minimum of 200 degrees F.

The cyclone system is an essential part of the dryer exhaust gas path and is always functioning (i.e., it cannot be turned on or off or bypassed).

During a planned shutdown of all dryers, emissions are minimized by stopping wood fuel feed to the suspension burners and wood strand feed to the dryers prior to the shutdown of the WESP and RTO. For an unplanned shutdown of an individual dryer (e.g. malfunction or fire), the WESP and RTO remain operational thereby minimizing emissions.

OTHER SOPS CITED and held on site at the facility:

ESOP-DS-008 Dryer Shut Down
ESOP-DS-009 Dryer Start-up after a power outage
ESOP-DS-010 Dryer Start Up
ESOP-WRO-038 RTO Normal Start Up Mode Cold State
ESOP-WRO-042 WESP Down Day Shut Down Mode
ESOP-WRO-044 WESP Start Up
ESOP-WRO-063 RTO Bypass-Bake Out

2.6.2 MALFUNCTIONS

Malfunctions of the suspension burners/rotary dryers and the corrective actions are described below:

Malfunction	Corrective Action	Additional Notes
Flame character in burners – poor color, flickering	Inspect wood fuel system for obstructions. Shut down burner and cease strand feed to dryer if problem persists.	Call maintenance to assist with troubleshooting as needed.
Fire in Dryer	Continue to operate WESP and RTO, shut down all dryers if CEMS indicate non-compliance	
Loss of system power or control system	Immediate shutdown of fuel feed and wood strand feed to dryers	

2.6.3 PREVENTIVE MAINTENANCE

Regular preventative maintenance activities for the suspension burners and dryers are as follows:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
MEC Gas Train	Once per shift	DSE Shift Summary
General inspection while equipment is operating	Once per shift	DSE Shift Summary
General inspection during shutdown and lubrication	Weekly	SAP electronic tracking system

Critical spares are documented in the site's Critical Spare Parts Report (See Appendix A).

2.7 CYCLONE COLLECTION SYSTEM

2.7.1 MALFUNCTIONS

Potential malfunctions of the cyclone collection system are as follows:

Malfunction	Corrective Action	Additional Notes
Discharge airlock disengage	Automatic shutdown of the dryers	WESP and RTO remain operational
Fire in cyclone system	Automatic shutdown of dryers, wood feed to TOH1 stops. Replace blown explosion vents as needed prior to startup.	WESP and RTO bypassed to prevent equipment damage.
Leaks in ductwork or explosion vents	Temporary patch immediately and permanent repair on scheduled down day not to exceed 3 weeks	

2.7.2 PREVENTIVE MAINTENANCE

Regular preventative maintenance activities for the cyclone system are as follows:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating, no visible emissions indicating leaks	Once per shift	DSE Shift Summary
General inspection while process is down, and lubrication	Weekly	SAP electronic tracking system

There are no critical spares to this equipment as repairs can be made with common mill items.

2.8 WET ELECTROSTATIC PRECIPITATOR (WESP)

2.8.1 MALFUNCTIONS

The following malfunctions can affect the ability of the system to maintain compliance:

Malfunction	Corrective Action	Additional Notes
Loss of power on three of the five fields	Automatic shutdown of the wood fired burners serving the dryers and bypass of RTO to prevent equipment damage	Set on automatic 15 minute timer
Loss of water flow to both the duct sprays and pre-quench tower	Automatic shutdown of WESP, dryer system, and RTO.	Set on 15 minute timer
Leaks in ductwork	Temporary patch and permanent repair on scheduled down day not to exceed 3 weeks	Patch when leak is detected.
Loss of control system or power	The dryer production rates and raw material mix (pine usage) are adjusted to ensure	To be followed after each occurrence.

	compliance with the VOC and CO emission limits in the ROP.	

2.8.2 PREVENTIVE MAINTENANCE

The following regular preventative maintenance is carried out on the WESP:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating, no visible emissions indicating leaks	Once per shift	DSE Shift Summary
General inspection while process is down	Every 2 weeks	SAP electronic tracking system
General lubrication	Monthly	SAP electronic tracking system

Critical spares for the WESP are documented in the site's Critical Spare Parts Report (See Appendix A).

2.9 REGENERATIVE OXIDZER (RTO)

2.9.1 MALFUNCTIONS

The potential malfunctions for the RTO system that would affect the ability of the dryers and heat sources to meet the regulatory emission limits are as follows:

Malfunction	Corrective Action	Additional Notes
All fields of WESP not energized	Automatic shutdown of RTO to prevent equipment damage	Dryer exhaust bypasses RTO and dryers/heat sources are shut down
Failure of inlet/outlet valves used for heat regeneration	Automatic shutdown of WESP, dryer system, and RTO.	Set on 15 minute timer
Loss of exhaust fan	Shutdown RTO, bypass dryer exhaust and commence shutdown of dryers	As soon as malfunction is detected
Low combustion temperature	Check burner operation and temperature probe/ thermocouples. Replace thermocouple if burner is operating properly.	As soon as malfunction is detected
Loss of temperature reading	Replace sensor if hardware failure, troubleshoot if software failure	Shutdown RTO and dryers if temperature sensor replacement does not correct
High inlet static pressure	Confirm proper operation of fans and inlet/outlet valves; conduct online bake out.	Schedule off line bake out and washing for next down day.
Gate(s) frozen after downtime (seasonal)	Run exhaust gases through RTO to thaw the gate(s). Malfunction if	As soon as malfunction is detected

	RTO minimum temperature has not been met.	

2.9.2 PREVENTIVE MAINTENANCE

The following preventative maintenance is done to the RTO:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating, no visible emissions indicating leaks	Once per shift	DSE Shift Summary
General inspection while process is down	Every two weeks	SAP electronic tracking system
Temperature Sensor	Semiannual	SAP electronic tracking system
Temperature Sensor Calibration	Semiannual	SAP electronic tracking system
Bake out/Washout	As needed	SAP electronic tracking system
Check lube and hydraulic reservoir	Annual	SAP electronic tracking system
Replacement of ceramic media	+/- 3 years	

Critical spares for the WESP are documented in the site's Critical Spare Parts Report (See Appendix A).

2.10 CONTINUOUS MONITORING SYSTEM – Dryers and Energy

2.10.1 DESCRIPTION

The RTO stack servicing the Dryers and Energy emissions unit is equipped with several continuous emission monitors which operate while the dryer and associated energy systems are operating. Additionally, the RTO combustion chamber temperature is continuously monitored for compliance demonstration with the PCWP MACT operating requirements for Thermal Oxidizers.

Summary descriptions of the monitors are as follows:

Monitor Type	Manufacturer Make/Model	Normal Range	Notes
Opacity	Teledyne LightHawk 560 SN: 5602516	0 – 100%, alarms at 20%	Cannot operate when WESP is operational and RTO in full bypass
Carbon Monoxide	CAI601 SN: B06014-M or B06015-M	0 to 1,000 ppm	

Airflow	Teledyne Ultraflo 150 SN: 1501354	0 – 233300 CFM	Used to calculate mass emissions of VOC and CO
VOC	CAI600 HFID SN: B05010	0 to 100 ppm and 0 to 1000 ppm (as propane) dual range	
Temperature Sensor	Rosemount High Temp. Thermocouple	0 – 1100 Degrees C	Used to monitor temperature of RTO Combustion Chamber

The CEMS system has been designed and installed under the following EPA specifications:

Opacity – PS1 of 40 CFR 60 Appendix B
CO – PS4 of 40 CFR 60 Appendix B
VOC – Performance Specifications for Continuous Emission Monitoring of Hydrocarbons, US EPA Publication EPA/530-SW-91-010 and PS8 of 40 CFR 60 Appendix B

Quality Assurance calibrations are conducted in accordance to 40 CFR 60 Appendix F, including daily calibrations, cylinder gas audits (CGA's), and relative accuracy test audits (RATA's). Additional details are provided in the Quality Assurance Plan (QAPs).

The temperature monitoring systems on the RTO Combustion Chamber have been designed and installed, and are maintained in accordance with 40 CFR 63.2269(b). The temperature sensors are located in a position that provides a representative temperature of the actual combustion chamber temperature. The thermocouples used have a minimum accuracy of 4 Degrees F or 0.75% of the temperature value. Quality assurance calibrations include a semi-annual electronic calibration, performed according to the manufacturer's operations and maintenance manual, followed by a validation check with a second, redundant sensor placed nearby the process sensor. Sensors are replaced whenever the manufacturer's specified operating temperature range is exceeded. All components of the temperature monitoring system are inspected quarterly and electrical connections are inspected for continuity, oxidation and galvanic corrosion.

2.10.2 MALFUNCTIONS

Potential malfunctions of the various continuous monitors are listed below:

Malfunction	Monitor	Corrective Action	Notes
Loss of Power	Opacity, CO, VOC, and airflow	Check breakers, reenergize when power available, reset and recalibrate upon restart	As soon as malfunction is detected
Monitor Hardware Fault	Opacity, CO, VOC, and airflow	Control instrument specialist to troubleshoot	As soon as malfunction is detected
Monitor Software Fault	Opacity, CO, VOC and airflow	Control instrument specialist to troubleshoot	As soon as malfunction is detected

Loss of sample line or probe heat/purge air	Opacity, CO, VOC, and airflow	Check circuit breaker to heater. Check sample lines and probes for dirt, condensation.	Temperatures are alarmed in system. Repair as soon as malfunction is detected.
Plugged or damaged sample lines or filters	CO, VOC, and airflow	Maintenance to troubleshoot and repair as soon as malfunction is detected.	Cal drift will alarm
Failed daily calibration	Opacity, CO, and VOC	Rerun a calibration immediately. If still failing, inspect cal gas system, analyzers, and sample line. Control system specialist to troubleshoot until recalibration passes.	If on-site troubleshooting does not correct the problem, contact vendor for assistance. Monitor downtime to be reported.
Failed daily calibration	Opacity	Rerun the calibration. If still failing, check windows for dirt, replace if necessary	As soon as malfunction is detected
Sample conditioner failure (moisture intrusion)	CO and VOC monitor	Maintenance to troubleshoot system as soon as malfunction is detected.	Will alarm as general system fault
Hardware failure	Temperature sensor	Maintenance to replace failed sensor as soon as malfunction is detected.	RTO shutdown if no combustion chamber temperature sensors operational
System control failure	Temperature sensor	Control instrument specialist to troubleshoot as soon as malfunction is detected	RTO shutdown if no combustion chamber temperature sensors operational

Weyerhaeuser has trained control system specialists on all shifts to troubleshoot the CEMS system should there be a malfunction

If the opacity monitor fails when operating the dryers with only the WESP or with a partially or fully bypassed RTO, the dryers may not be operated until the monitor is repaired and/or the RTO is no longer bypassed, unless a certified visual emissions evaluator performs a Method 9 reading and determines that the opacity is 20% or less.

2.10.3 PREVENTATIVE MAINTENANCE

Beyond the required QC activities for the monitors and Temperature Monitoring System (calibration and validation checks, quarterly CGA's, and annual RATA's), the following preventative maintenance program is in place for the continuous emission monitors:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating	Once per shift	Dryer CERMS checklist
Calibration gas tank levels	Daily	Dryer CERMS checklist
Replace filter elements for airflow monitors	Semiannual	SAP electronic system
Rebuild VOC and CO pumps	Annual	SAP electronic system
Replace filter elements for VOC and CO sampling probe	Every 28 days	SAP electronic system
Temperature Monitoring System	Quarterly	SAP electronic system

Critical spares for the Continuous Monitoring Systems are documented in the site's Critical Spare Parts Report (See Appendix A).

3.0 PRESS (EUPRESS)

3.1 GENERAL DESCRIPTION

After the wood strands are dried in the dryers, they are mixed with resin and formed into mats on the form line. The form line feeds into a single press. The mats are transported to the press on steel caul screens and set in a loader, which feeds the press. The press uses pressure and heat to form the panels. The heat is provided by thermal oil (the thermal oil heaters are discussed in the dryer and energy section). The exhaust from the press and unloader are captured in a hood and treated by a biological air filtration (BAF or biofilter) unit that control emissions from the pressing process. The BAF is actually constructed of two-packed tower humidifiers and filter beds, operating simultaneously to treat the press exhaust. The exhaust is combined after the biofilter beds and ducted to the press stack.

3.2 REGULATORY REQUIREMENTS

There are numerous emission limits in the permit for the press. Additionally, the PCWP MACT standard contains emission limits and operating requirements.
The permit for the press exhausting through the press stack that is continuously monitored is as follows:

Parameter	Limit	Averaging Time	Compliance Demonstration
VOC emission rate	19.5 lb./hr.	30 day rolling	Continuous emissions rate monitor
VOC emission rate	85.4 tons per year	12 month rolling	Continuous emissions rate monitor

The PCWP MACT rules include operational requirements for biofilter bed temperature monitoring and for the design and operation of the press enclosure (Wood Products Enclosure).

3.3 CRITICAL MONITORED VARIABLES

Similar to the dryers, the press is highly automated with many variables monitored for production and quality purposes. The critically monitored variables on the press and biofilter for environmental compliance purposes are as follows:

Equipment	Variable Monitored	Normal range/reading
Press Enclosure	Access doors/position streamers	Doors closed and streamers pointing into press
Biofilter	Humidifier pressure drop	0.5 to 10" wg
Biofilter	Humidifier exit air temperatures	<120° F
Biofilter	Bed Temperatures	77.7F – 99.9F based on compliance test results
Biofilter	Water application rate	Variable based on bed condition
Press exhaust	VOC, airflow	<19.5 lb./hr. VOC

3.4 PRESS AND PRESS ENCLOSURE

3.4.1 STARTUPS AND SHUTDOWNS

Press startup begins when heat is first applied to the press to warm it up to be ready for production. Press start up ends when the biofilter media temperature established during performance testing has been reached. HAP emissions are minimized during startup by (1) relying on the absorptive capacity of the biofilter for water soluble HAPs until the biofilter is brought to its operating temperature, and (2) increasing the operating temperature as rapidly as possible using heat and humidity generated from pressing boards and supplemental steam addition. The HAP emissions from the press are made up of water soluble HAPs. The biofilter media is moist, allowing it to absorb a considerable amount of HAPs. Colder temperatures increase the absorptive capacity of the biofilter. Heating the biofilter will cause the biota to rapidly consume the accumulated HAPs. Although the biofilter temperature is below the operating limit during startup, the HAP emissions removal is expected to be greater than the 90% destruction required. Shut down begins when the final 16 boards exit the press enclosure and the press heat is shut off. Shut down ends when the Press Exhaust Fans and Biofilter Exhaust fans are turned off. There may be interruptions for various reasons in wood mat feed but the press will stay hot in idle mode, ready to resume operations at any time.

The press is always exhausted to the biofilter, except when the biofilter media is changed out as discussed in Section 3.5.1 below. For this reason, it is anticipated that there will be no emissions in excess of the PCWP MACT limitations during routine start-ups or shutdowns when the biofilter is operating in its normal bed temperature range.

The PCWP MACT standard requires that the press enclosure achieve a certain capture efficiency or meet the definition of a "wood products enclosure" under 40 CFR 63.2292. The press enclosure at the facility meets this definition with the access doors positioned consistent with ESOP-BFP-018 Press Enclosure Compliance. The press will not be started up unless the access doors positioned consistent with the ESOP.

During startup, the continuous emission monitors are operational before mats are fed to the press.

3.4.2 MALFUNCTIONS

There are relatively few malfunctions of the press itself that will cause excess emissions due to the fact that the press is always exhausted through the biofilter. Airflow continues to the biofilter regardless of whether or not the press is operating.

Malfunction	Corrective Action	Additional Notes
Loss of power	Restore power, re-start exhaust fans	As soon as power is restored
Process fire	Extinguish fire, re-start system	As soon as safe to restart system
Lack of press enclosure inflow	Check exhaust fans, make-up air units and access door positions	ESOP-BFP-018 Press Enclosure Compliance

3.4.3 PREVENTATIVE MAINTENANCE

The following regular preventative maintenance is performed on the press and press enclosure system:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating	Once per shift	Press Reporting System (MIS) Operator Log
Clean inlet ducting and fan impellors	Every 6 months	SAP electronic system
Fan bearing vibration analysis	Every 6 months	SAP
Fans – sheaves, belts	Every year	SAP electronic system
Media replacement	About every 3 years	SAP electronic system

3.5 PRESS BIOFILTER

3.5.1 MALFUNCTIONS

The following malfunctions of the biofilter may affect the ability of the system to meet the emission limitations in the permit and/or MACT standard

Malfunction	Corrective Action	Additional Notes
Loss of water spray in humidifier indicated by high air exit temperature	Check humidifier components, including pumps and sump pumps and repair as necessary as soon as the malfunction is detected	Increase over-bed irrigation on biofilter bed to maintain bed temperatures
Loss of over-bed water spray indicated by high bed temperature	Check over-bed spray components, including pumps, filters and valves and repair as necessary	Resume over-bed irrigation on biofilter bed to return bed temperatures to normal operating range

Mechanical failure of biofilter exhaust fans	Troubleshoot and repair mechanical failure, restart fans as soon as malfunction is detected.	
Loss of control system or power	Troubleshoot control system power problem and restart affected components as soon as malfunction is detected.	
Structural failure of bed resulting in reduced exhaust gas retention time	Start additional humidifier pumps and ensure optimal blowdown water flow to the WESP. Restore bed to design exhaust gas retention time through media aeration and/or screening or through replacement of media	Notify MDEQ and plan repair in time-frame agreed upon with the district inspector.

The press exhaust gases may bypass the biofilter for routine maintenance purposes such as biofilter media change out. The PCWP MACT standard allows for up to 0.5% bypass based on actual operations over a 12-month period. During such bypass, emissions are minimized by adjusting production and/or softwood use as to not exceed the emissions limitations set forth in the facility's air permit.

3.5.2 PREVENTATIVE MAINTENANCE

The following regular preventative maintenance procedures are performed on the biofilter:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating	Once per shift	MIS Operator Log
Replace water nozzles on overhead sprays	Every 56 days	SAP electronic system
Underbed Sump Operation	Every 182 days	SAP electronic system
Clean out humidifier sump	Every 182 days	SAP electronic system
Fans – sheaves, belts	Every year	SAP electronic system
Media replacement	About every 3 years	SAP electronic system
Fan Inspection	Weekly	SAP electronic system

The critical spares are identified in Appendix A.

3.6 CONTINUOUS MONITORING SYSTEM – Press and Biofilter

3.6.1 DESCRIPTION

The stack servicing the press and biofilter emissions unit is equipped with continuous emission monitors which operate while the Press and biofilter are operating. Additionally, the biofilter bed temperature is continuously monitored for compliance demonstration with the PCWP MACT operating requirements for biofilters.

A summary description of the monitors is as follows:

Monitor Type	Manufacturer Make/Model	Normal Range	Notes
Airflow	Teledyne Ultraflow Model 150 SN: 1501355	0-200,000 CFM	Used to calculate mass emissions of VOC
VOC	CAI600 HFID SN: B05011	0 to 100 ppm (as propane) dual range	
Temperature Sensor	Rosemount Type T Thermocouple	-180 – 400 Degrees C	Used to monitor temperature of Biofilter Bed

This THC monitoring system has been installed and is calibrated, maintained and operated in accordance with the procedures found in "Performance Specifications for Continuous Emission Monitoring of Hydrocarbons, US EPA Publication EPA/530-SW-91-010, and Performance Specification 8 (PS8) of 40 CFR 60, Appendix B. The system is used to measure and report the mass emission rate of VOC's from the press.

The monitors are operated at all times while the press is operating.

Calibration and quality control procedures comply with 40 CFR 60 Appendix F. Additional details on the monitors, including calibration and quality control procedures, are contained in the quality assurance plan (QAP).

The temperature monitoring system on the Biofilter Bed have been designed and installed, and are maintained in accordance with 40 CFR 63.2269(b). The temperature sensors are located in a position that provides a representative temperature of the bed temperature.

The temperature monitoring system is operated at all times while the press is operating, except during periods when the bed media is being changed out.

As per 40 CFR 63.2269 (b), the thermocouples used have a minimum accuracy of 4 Degrees F or 0.75% of the temperature value. Quality assurance calibrations include a semi-annual electronic calibration, performed according to the manufacturer's operations and maintenance manual, followed by a validation check with a second, redundant sensor placed nearby the process sensor. Sensors are replaced whenever the manufacturer's specified operating temperature range is exceeded. All components of the temperature monitoring system are inspected quarterly, and electrical connections are inspected for continuity, oxidation and galvanic corrosion.

3.6.2 PRESS SYSTEM CEMS MALFUNCTIONS

There potential malfunctions that can affect the ability of the monitors to corrected measure and record the emissions from the press are as follows:

Malfunction	Monitor	Corrective Action	Notes
Loss of Power	VOC , airflow, and thermocouples	Check breakers, reenergize when power available, reset and recalibrate upon restart	
Monitor Hardware Fault	VOC, and airflow	Control instrument specialist to troubleshoot	
Monitor Software Fault	VOC and airflow	Control instrument specialist to troubleshoot	
Loss of sample line or probe heat/purge air	VOC and airflow	Check circuit breaker to heater. Check sample lines and probe for dirt, condensation.	Temperatures are alarmed in system.
Plugged or damaged sample lines or filters	VOC and airflow	Maintenance to troubleshoot and repair	Cal drift will alarm
Failed daily calibration	VOC	Rerun a calibration. If still failing, inspect cal gas system, analyzers, and sample line. Control system specialist to troubleshoot until recalibration passes.	If on-site troubleshooting does not correct the problem, contact vendor for assistance. Monitor downtime to be reported.
Sample conditioner failure (moisture intrusion)	VOC monitor	Maintenance to troubleshoot system	Will alarm as general system fault
Hardware failure	Temperature sensor	Maintenance to replace failed sensor	System will utilize remaining redundant sensors to calculate average bed temperature
System control failure	Temperature sensor	Control instrument specialist to troubleshoot	

3.6.3 PREVENTIVE MAINTENANCE

In addition to the daily calibration requirements, quarterly calibration gas audits, and annual relative accuracy test audits, the following preventative maintenance is performed on the monitors:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating	Once per shift	Press CERMS Checklist
Calibration gas tank levels	Daily	Press CERMS Checklist
Replace filter elements for airflow monitors	4 times per year	SAP electronic system
Rebuild VOC pump	Annual	SAP electronic system
Temperature Monitoring System	Semiannual	SAP electronic system

Critical spares are documented in the site's Critical Spare Parts Report (See Appendix A).

4.0 MISCELLANEOUS SOURCES

4.1 PAINT BOOTH (EUPAINTBOOTH)

4.1.1 DESCRIPTION

The Paint Booth services the Edge and End painting operation in the finishing area of the mill. The material applied to the unitized panels is a latex-based sealant. The Paint Booth provides a negative draft around the spraying operating to contain any over spray. The air is filtered and vented through a stack located on the roof of the warehouse. The condition of the filter bank controls the collection efficiency of the unit.

4.1.2 REGULATORY REQUIREMENTS

The permit limits the particulate matter emission rate to 0.94 lb./hr. and 4.1 tons per year. Compliance with this limit is demonstrated by an emissions calculation provided in Appendix 7 of the air permit. In support of this calculation records of the amount of paint used in the paint booth are maintained. The permit also limits the visible emissions (opacity) from the paint booth to 5%. Compliance is demonstrated by monitoring and recording the pressure drop across the paint booth once per day.

The MACT standard also requires that only non-HAP coatings are to be used in the paint booth. Documentation showing that the coatings used are non-HAP coatings is kept on file.

4.1.3 CRITICAL MONITORED VARIABLES

The pressure drops across the filters are measured at least once per shift. The pressure drop typically ranges from 0.03" to 3.0" wg. Paint usage is tracked through purchasing records.

4.1.4 STARTUP, SHUTDOWN, AND MALFUNCTIONS

The paint booth will not be operated unless the filters are installed and functioning properly. There is no particular startup or shutdown sequence to this process that affects emissions.

If the paint filters indicate a pressure drop outside of normal, then the following corrective actions are taken:

1) Paint booth fan speeds are checked for normal speed.

2) If fans are operating properly, paint filters are changed/replaced.

4.1.5 PREVENTIVE MAINTENANCE

The following regular preventative maintenance is performed on the paint booth:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating; verification of pressure drop across filters	Once per shift	Warehouse Shift Report
General inspection and lubrications	Every 4 months	SAP electronic system

The facility maintains a stock of replacement filters. There are no other critical spares for this equipment.

4.2 WOOD HANDLING SYSTEMS WITH CYCLONE/BAGHOUSES (FGWOODHANDLING)

4.2.1 DESCRIPTION

There are seven (7) wood or wood dust collection systems on the mill site. Each system has essentially the same components of a cyclone, fan/blower and baghouse. The systems are located on the finishing area (Finishing I), mat trim system, dry bin clean-up, Form line air quality, MDI dust collection, screens building clean-up, and fuel prep and storage area.

4.2.2 REGULATORY REQUIREMENTS

The wood dust collection systems are limited by permit to 0.002 pounds per thousand pounds of exhaust gasses, 1.86 lb./hr., and 8.1 tons per year of particulate emissions for all combined. All baghouses have a visible emissions limit of 5%.

Compliance with these limits is demonstrated by monitoring the differential pressure across the baghouses.

4.2.3 CRITICAL MONITORED VARIABLES

The proper performance of the baghouses is determined by maintaining the pressure drop in the following ranges:

Emission Unit ID	Baghouse name	Acceptable Pressure drop
EUSAQ	Stranding Air Quality	0.10” to 3” wg.
EUDRYFUEL	Fuel Prep. and Storage	0.10” to 3” wg.
EUCLEANUP	Screens Bldg. Cleanup	0.10” to 8” wg.
	Dry Bin Cleanup	0.10” to 4” wg.
EUBLENDVENT	MDI Dust Collection	0.10” to 3” wg.
EUFLAQ	Form Line	0.10” to 3” wg.
EUMATTRIM	Mat Trim	0.10” to 3” wg.
EUFINISHING	Finishing I	0.10” to 3” wg.

There is also a spark detection system which is monitored automatically.

The status for all motors in each system is also monitored and displayed continuously in the process control system.

4.2.4 STARTUP, SHUTDOWNS, AND MALFUNCTIONS

The baghouses are all operational prior to the startup of the wood handling systems. There is no particular startup or shutdown exceedance to minimize emissions beyond this requirement.

Malfunctions that can affect the ability of the systems to maintain compliance with the permit limits are as follows:

Malfunction	Corrective Action	Additional Notes
Fire in system	Abort gate opens to allow venting to atmosphere, system is shutdown automatically	Baghouses is inspected for damage and bags replaced as necessary
Ductwork leaks	Shutdown system to repair leak or replace explosion vents prior to restart. Temporary repairs of leaks for up to (3) weeks.	Indicated by missing explosion vent or visual observation
Pressure drop across baghouse out of range	Replace any damaged bags immediately. Blinded bags to be replaced at earliest down day not to exceed (3) weeks	Associated pneumatic systems are shut down until bags are replaced
Failure of bag cleaning mechanism	Repair bag cleaning mechanism immediately	Associated pneumatic systems are shut down until repairs are complete.

Note: loss of power is not considered a malfunction because this would result in a shutdown of the system and the bags remain operational.

4.2.5 PREVENTIVE MAINTENANCE

The following regular preventative maintenance activities are carried out on the baghouse collectors:

Item To Be Inspected	Frequency of Inspection	Recordkeeping Method
General inspection while equipment is operating; verification of pressure drop across filters	Once per shift	Shift Summary Report and/or Press CERMS and Dust Collection System Daily Checklist
General inspection while equipment is not operating	Every 180 days	SAP electronic system
Calibration of magnahelic or photohelic	Once per year	SAP electronic systems

The bag filters and cages that hold the bags in place are considered critical and are completely spared. The bag cleaning mechanism is also spared on site.

5.0 RECORD OF REVISIONS

In accordance to the Michigan Air Pollution Rules 911 and 912 and the PCWP MACT regulations, this plan will be reviewed and revised as necessary on an annual basis.

Revision dates to this plan are listed as follows:

Revision Date	Description	Sections Affected	Revised By:
7/26/11	Committee review of plan	All	Environmental Committee
8/13/11	Updated PM and frequency	3.5 and 3.6	K. Moss
3/9/12	Updated minimum RTO temp	2.3	K. Moss
8/26/12	Updated Woodhandling	4.2	K. Moss
3/23/13	Updated minimum RTO temp	2.3	K. Moss
11/13/13	Replaced “Maximo” with “SAP”	All	F. Dandois
1/24/2014	Updated opacity monitor info	Pg 16	Faith Dandois
8/21/14	Removed reference to deleted ESOP-DSE-040 RTO Power Outage. Updated airflow monitor information.	Pgs. 11, 16, 23	Faith Dandois
2/1/15	Updated minimum RTO temp and CEM Info for Press and Dryers	2.3, 2.10.1 and 3.6.1	Kathi Moss
2/23/15	Review	All	Leadership Team
6/3/15	Corrected Paint Booth dp typo for high range	4.1.3	Kathi Moss
2/1/2016	Review	All	Leadership Team
6/8/16 – 7/19/16	Chg’d RTO Min Temp. Updated per discussion with MDEQ. Archived revisions records prior to 2011	All	Kathi Moss
12/20/16	Changed RTO Min Temp	2.3	Kathi Moss
8/28/17	Review after press PTI and removed CO from press monitoring table	3.6.3	Kathi Moss
3/6/19	Review and Dryer PTI & ROP update and SAP work order frequencies	1.6(3), 2.6.1, 2.6.2, 4.2.3	Kathi Moss

RICE MACT: Operations and Maintenance (O&M) Plan

The purpose of this O&M Plan is to document the means by which the Weyerhaeuser Grayling OSB facility manages the site's stationary diesel-powered engine and emergency engines as demonstrated by way of the following operating practices and maintenance procedures.

Operations

- Limit the engine's time spent at idle during start-up and the engine's start-up time to less than 30 minutes.
- Document the annual engine hours of operation and the purpose of use for each hour operated (i.e., maintenance checks and readiness testing, conditional non-emergency use). Note that there is no time limit on the use of the engine in emergency situations.
- Comply with all applicable CI RICE MACT requirements for Title V permit certification purposes.

Documentation of Hours

- A non-resettable hour meter is installed on each on-site stationary RICE
- Hour meter readings are recorded in the log sheet for each RICE unit every time the engine is shut down after use and at the beginning of each month. Reasons for engine run time are recorded at the same time. The diesel logs are collected quarterly and digital copies are kept in: S:\Environmental\Section 3 Air\500 Reports\Air quality Reports\Air Emissions\Diesel Logs
- Compiled yearly hours for each RICE unit with reasons for use are recorded in: S:\Environmental\Section 3 Air\500 Reports\Air Quality Reports\AirEmissions\Airsum

Maintenance

- Assuming the engine operates less than 500 hours/year; change the oil and filter annually, inspect the air cleaner and all hoses and belts annually and replace as necessary. Document each of these annual activities. If the engine operates more than 500 hours during the year then change the oil and filter every 500 hours.
- Limit the maintenance checks and readiness testing of the engine to less than 100 hours per year (not more than 50 of these hours can be dedicated to conditional non-emergency use).
- Keep records of the maintenance conducted on the engine in order to demonstrate that it is being operated and maintained according to the plant's maintenance plan (i.e., preventative maintenance system).
- Conform to all applicable instructions in the Operation and Maintenance Manuals. Copies of these manuals are kept at the Grayling facility.
- Immediately report any failure to perform, on the schedule required, the changing of the oil and the filter and inspection of the air cleaner and the hoses and the belts.

Documentation of Maintenance

- Preventative Maintenance (repetitive) preventive maintenance plans are identified by SAP system number and listed with the information for each RICE unit in this document.

Detroit Diesel Emergency Fire Pump Engine/EUFIREPUMP

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start, Fluid Check, and Inspection: PM# 1093045
Annual Service & Inspection: PM# 1113251
Two Year Battery Replacement: PM# 1111774

Name:	Detroit Diesel Emergency Fire Pump			
Mfg./Install Date:	Feb 1981	**Air/Fuel Ratio:**	32.24	
Serial No.:	6A0414479	**HP:**	281	
Model No.:	6-71 Detroit Diesel	**Injector:**	N95	
Fuel Consumption:	17.11 GPH at 100% rated load, NA for 50% rated load			
	.376 lb./hp/hr. at 2600 RPM			
Displacement:	426 cubic inches			
Exhaust:	GoogleEarth Coordinates: 44°35’35”N, 84°41’40”W 6 1/2" opening directed at the ground (angled downward at 45 degree) 880 feet west of "21" 55' south of "K" (noted in Tom Mosher's notes from 1994 permit documentation in archives- site plan coordinates K and 21)			
Exhaust Temp:	780° F	**Cylinders:**	6	
Exhaust Flow:	2090 CFM	**No. of Cycles:**	2 T	
Emission Data:	**Gm/hr.**	**Gm/bhp/hr.**	**Lb/hr**	**PPM**
HC	74.05	0.23	0.16	85
NOx	3624.06	11.4	7.99	1266
CO	4896.3	15.4	10.79	2810
CO2	181894.1	571.99	401	66429.67
SO2	542.51	7.71	1.2	136.21
PM	184.44	0.58	0.41	

Cummins Diesel Powered Emergency Hot Oil Circulating Pump Engine/EUDIESELHOTOIL

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start: PM# 1115267

Two-week Fluid Check and Inspection: PM# 1112855

Annual Service & Inspection: PM# 1094213

Two-year Battery Replacement: PM# 1111773

Name:	Cummins Emergency Diesel Hot Oil Pump		
Mfg./Install Date:	Mfg. 2/12/2002 Install: 7/6/2006	**Air/Fuel Ratio:**	No information
Serial No.:	68009179	**HP/kW:**	85/63
Model No.:	Cummins Diesel B3.3	**Injector:**	Bosch-Zexel VE direct injection. C6205113101
Fuel Consumption:	.345 lb./hp/hr. at 1400 RPM		
	.376 lb./hp/hr. at 2600 RPM		
Displacement	3.3L (199 cu. In.)		
Exhaust:	GoogleEarth Coordinates: 44°35'30"N, 84°41'23"W Vertically through a 3 1/2" opening covered with counter balanced rain cap 12' above grade and 1 1/2' from outside wall, 290' east of "21" 495 south of "K" (noted in Tom Mosher's notes from 1994 permit documentation in archives- site plan coordinates K and 21)		
Exhaust Temp:	970° F	**Cylinders:**	4
Exhaust Flow:	475 CFM	**No. of Cycles:**	In line 4 cycle
Emission Data:	**Gal./bhp/hr**		
HC	**0.8**		
CO	**4.0**		
NOx	**6.2**		
PM	**0.5**		

Caterpillar Emergency Stand-by Diesel Generator/EUEMERGENCYGEN

40 CFR Part 63, Subpart ZZZZ (RICE MACT)

Maintenance Procedures

Two-week Test Start, Fluid Check, and Inspection: PM# 1115267

Annual Service/Inspection: PM# 1112833

Two-year Battery Replacement: PM# 1115133 *Can be 3-year per manual*

Name:	Caterpillar Emergency Stand-by Diesel Generator		
Mfg./Install Date:	~ 1981 install	**Air/Fuel Ratio:**	No information
Serial No.:	85Z03713 2W1742	**HP/kW:**	306/228
Model No.:	3306B Caterpillar	**Injector:**	
Fuel Consumption:	19.2 gal./hr. at 100% rated load		
	10.0 gal./hr. at 54% load		
Displacement:			
Exhaust:	GoogleEarth Coordinates: 44°35'30"N, 84°41'23"W Vertically through a 6" opening covered with counter balanced rain cap 10' above grade and 1 1/2' from outside wall. 295 feet east of "21" 495 south of "K" (noted in Tom Mosher's notes from 1994 permit		

	documentation in archives- site plan coordinates K and 21)		
Exhaust Temp:		**Cylinders:**	6
Exhaust Flow:		**No. of Cycles:**	
Emission Data:			

Cummins Diesel Powered Air Compressor Engine/EUCOMPRESSOR

This Cummins diesel engine provides power for a portable D900-HAF Sullivan and Palatek air compressor. The air compressor's primary purpose is to provide back-up to the mill's compressed air system.

NSPS, Subpart IIII, 40 CFR 89.112 (emission certification)

Maintenance Procedures

PMS (250 hour or 3 months, 500 hour or 6 months, 1000 hour or 1 year, 2000 hours or 2 years)

Weekly Test Start, Fluid Check, and Inspection: PM# 112748

Biennial and Annual Service & Inspection: PM# 1117617

Two-year Battery Replacement: PM# 1115134 (not listed in the engine manual)

Name:	Cummins Diesel Powered Air Compressor Engine		
Mfg./Install Date:	9/26/2014/	**Air/Fuel Ratio:**	
Serial No.:	73745288	**HP/BTU:**	305 HP/776,225 BTU/227.4 kw
Model No.:	QSC 8.3 (Tier 3)	**Injector:**	ECM
Fuel Consumption:	167 mm3/stroke, #2 diesel at < 5% sulfur content		
	10.06 gph @ 1900 RPM (max load)		
	7.41 gph @ 1400 RPM (idle)		
Exhaust:	GoogleEarth Coordinates: 44°35'32"N, 84°41'21"W Turbo exhausts vertically through a 3 1/2" opening covered with counter balanced rain cap 7' above ground.		
Exhaust Temp:	900° F	**Cylinders:**	6
Exhaust Flow:	2097 CFM	**No. of Cycles:**	4
Emission Data:	**FEL EPA G/KW-h**	**Displacement:**	8.3 liter (506 in^3 total displacement)
CO	3.5		
NMHC	0.19		
NOx	0.40	Mfg. certified below FEL	
PM	0.02	Mfg. certified below FEL	

Generac Emergency Generator/EUGENERAC

NSPS, Subpart JJJJ (For Gasoline/**Propane**/LPG fueled units)

Maintenance Procedures

PM 1147983 1-year PM completed per operating manual

Name:	Generac Emergency Stand-by Generator (2 cylinder) – Gate House		
Mfg./Install Date:	5/16/17 ***	**Air/Fuel Ratio:**	
Serial No.:	3001637995 (Unit) 3001644197 (Engine)	**HP/kW:**	29.5/22
Model No.:	G0070420	**Injector:**	
Fuel Consumption:	3.6 gal./hr. at 100% rated load		
	2.1 gal./hr. at 50% rated load		
Displacement:	2.4L		
Exhaust:	GoogleEarth Coordinates: 44°35'41"N, 84°41'36"W		
Exhaust Temp:	482C/900F	**Cylinders:**	2
Exhaust Flow:	165 CFM	**No. of Cycles:**	4
Emission Data:	Emission Warranty		

**** Mfg./Install Date: Project complete date in PACE*

Record of Revisions

Revision Date	Description	Sections Affected	Revised By:
3/24/2020	Added GoogleMap Coordinates for engines and updated Generac Info	All	Kathi Moss
11/11/19	Added Permit (EU) Emission Unit Names to engines	Engine Descriptions	Kathi Moss
4/5/2019	Updated to include mfg/install year, added tables, compressor description, & changed PM numbers	All	Kathi Moss
8/18/2015	Added Cummins air compressor diesel	Engine descriptions	Faith Dandois
5/7/2014	Updated info on Cummins and Caterpillar	Engine descriptions	Faith Dandois
8/9/2013	Revised for SAP conversion	PM numbers	Faith Dandois

5/23/2013	Created	All	Faith Dandois

DEQ

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emission Unit Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE			
Form Type	**Emission Unit**	AQD Source ID (SRN)	**B7302**

EMISSION UNIT IDENTIFICATION			
AQD Emission Unit ID	**EU0072**	EU ID	**EUSAQ**
NAICS Code (if different from Source Form)			
Installation Date MM/DD/YYYY	**08/19/2017**	Dismantle Date MM/DD/YYYY	
Emission Unit Description - (Include Process Equipment and Control Devices)		**Stranding area dust collection baghouse**	
Emission Unit Type		**Other process equipment**	
Is this a combustion source?		**N**	
Is this combustion source used to generate electricity?			
Design Capacity	Design Capacity Numerator	Design Capacity Denominator	
Maximum Nameplate Capacity		Megawatts	

RULE 201 APPLICABILITY			
Grandfathered?	**N**		
Exempt from Rule 201?	**Y**	If Yes, Rule Number	**Rule 290**
If Rule 201 Exempt, Is Throughput Below Reporting Thresholds?		**Y**	
Permit?	**N**	If Yes, Enter the Permit Number	
Is This Emission Unit Required To Report Emissions To MAERS For This Reporting Year?		**Y**	

CONTROL DEVICE(S)

EMISSION UNIT STACK(S)

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Reporting Group Form

Authorized under 1994 P.A. 451, as amended. Completion of this form is optional.

FORM REFERENCE			
Form Type	**Reporting Group**	AQD Source ID (SRN)	**B7302**

REPORTING GROUP IDENTIFICATION			
AQD Reporting Group ID	**RG0061**	Reporting Group ID	**RGWOODHANDLING**
Reporting Group Description	**Wood handling sources with baghouse control**		

REPORTING GROUP EMISSION UNITS	
7. Emission Unit ID	**EUDRYFUEL**
7. Emission Unit ID	**EUFINISHING**
7. Emission Unit ID	**EUCLEANUP**
7. Emission Unit ID	**EUMATTRIM**
7. Emission Unit ID	**EUFLAQ**
7. Emission Unit ID	**EUBLENDVENT**
7. Emission Unit ID	**EUSAQ**

DEQ

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Activity Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Activity**	AQD Source ID (SRN)	**B7302**	EU ID	**RGWOODHANDLING**

ACTIVITY INFORMATION			
Source Classification Code(SCC)	**30700808**		
SCC Comment	**Wood Dust Handling Cyclone/Baghouse Exhaust**		
SEASONAL MATERIAL USAGE SCHEDULE, IF THROUGHPUT IS > 0, THEN SEASONAL PERCENTAGES MUST TOTAL 100%			
Winter (Jan,Feb, Dec)	Spring (Mar-May)	Summer (Jun-Aug)	Fall (Sep-Nov)
25	**26**	**26**	**23**
OPERATING SCHEDULE			
Hours per Day	Days per Week	Days per Year	
24	**7**	**327**	
MATERIAL INFORMATION			
Material Code	Material Throughput	Unit Code	
DEVICE	**1.52**	**EACH-HR**	
Material Description	**Total PM/Hours of operation during reporting year**		
VOC Content (coatings or solvent)	**% by Weight**	Density	
BTUs (fuel)			
Sulfur Content (fuel)	**% by Weight**	Ash Content (fuel)	**% by Weight**

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Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emissions Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Emissions**	AQD Source ID (SRN)	**B7302**	EU ID	**RGWOODHANDLING**
SCC	**30700808**	Material Code	**DEVICE**		

EMISSION INFORMATION			
Pollutant Code	**PM10,FLTRBLE**	Annual Emissions	**11926.47 LB**
Emission Basis	**Other**		
List Emission Factor	**1.52**	Exponent	**0**
Emission Factor Unit Code	**LB / HR**	Control Efficiency	**95 %**
Comment	**See attached 2019 Supporting Documentation.docx for details**		

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emission Unit Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE			
Form Type	**Emission Unit**	AQD Source ID (SRN)	**B7302**

EMISSION UNIT IDENTIFICATION			
AQD Emission Unit ID	**EU0073**	EU ID	**EUGENERAC**
NAICS Code (if different from Source Form)			
Installation Date MM/DD/YYYY	**05/16/2017**	Dismantle Date MM/DD/YYYY	
Emission Unit Description - (Include Process Equipment and Control Devices)		**Back-up power for gate house and scales**	
Emission Unit Type		**Reciprocating IC Engine**	
Is this a combustion source?		**Y**	
Is this combustion source used to generate electricity?		**Y**	
Design Capacity	**29.5**	Design Capacity Numerator **HP**	Design Capacity Denominator **HR**
Maximum Nameplate Capacity	**22**	Megawatts	

RULE 201 APPLICABILITY			
Grandfathered?	**N**		
Exempt from Rule 201?	**Y**	If Yes, Rule Number	**Rule 282(i)**
If Rule 201 Exempt, Is Throughput Below Reporting Thresholds?		**Y**	
Permit?	**N**	If Yes, Enter the Permit Number	
Is This Emission Unit Required To Report Emissions To MAERS For This Reporting Year?		**Y**	

CONTROL DEVICE(S)

EMISSION UNIT STACK(S)

DEQ

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emissions Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Emissions**	AQD Source ID (SRN)	**B7302**	EU ID	**EUGENERAC**
SCC	**20201001**	Material Code	**LPG**		

EMISSION INFORMATION			
Pollutant Code	**CO**	Annual Emissions	**473.38 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**3.57**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**NOX**	Annual Emissions	**3368.04 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**2.54**	Exponent	**2**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**PM10,PRIMARY**	Annual Emissions	**11.87 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**8.95**	Exponent	**-1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**VOC**	Annual Emissions	**137.9 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**1.04**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Activity Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Activity**	AQD Source ID (SRN)	**B7302**	EU ID	**EUGENERAC**

ACTIVITY INFORMATION			
Source Classification Code(SCC)	**20201001**		
SCC Comment	**RICE MACT engine**		
SEASONAL MATERIAL USAGE SCHEDULE, IF THROUGHPUT IS > 0, THEN SEASONAL PERCENTAGES MUST TOTAL 100%			
Winter (Jan,Feb, Dec)	Spring (Mar-May)	Summer (Jun-Aug)	Fall (Sep-Nov)
25	**25**	**25**	**25**
OPERATING SCHEDULE			
Hours per Day	Days per Week	Days per Year	
1	**1**	**14**	
MATERIAL INFORMATION			
Material Code	Material Throughput	Unit Code	
LPG	**13.26**	**E3 GAL**	
Material Description	**Liquid propane gas**		
VOC Content (coatings or solvent)	**% by Weight**	Density	**0.116 LB/FT3**
BTUs (fuel)	**2572 BTU/FT3**		
Sulfur Content (fuel)	**% by Weight**	Ash Content (fuel)	**% by Weight**

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emission Unit Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE			
Form Type	**Emission Unit**	AQD Source ID (SRN)	**B7302**

EMISSION UNIT IDENTIFICATION					
AQD Emission Unit ID	**EU0074**	EU ID	**EUCOMPRESSOR**		
NAICS Code (if different from Source Form)					
Installation Date MM/DD/YYYY	**09/26/2014**	Dismantle Date MM/DD/YYYY			
Emission Unit Description - (Include Process Equipment and Control Devices)	**Back-up air compressor. Was purchased as a non-road portable compressor but the unit does not get moved for use often enough to meet definition.**				
Emission Unit Type	**Reciprocating IC Engine**				
Is this a combustion source?	**Y**				
Is this combustion source used to generate electricity?	**N**				
Design Capacity	**305**	Design Capacity Numerator	**HP**	Design Capacity Denominator	**HR**
Maximum Nameplate Capacity				Megawatts	

RULE 201 APPLICABILITY			
Grandfathered?	**N**		
Exempt from Rule 201?	**Y**	If Yes, Rule Number	**Rule 282(i)**
If Rule 201 Exempt, Is Throughput Below Reporting Thresholds?	**Y**		
Permit?	**N**	If Yes, Enter the Permit Number	
Is This Emission Unit Required To Report Emissions To MAERS For This Reporting Year?	**Y**		

CONTROL DEVICE(S)

EMISSION UNIT STACK(S)

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Reporting Group Form

Authorized under 1994 P.A. 451, as amended. Completion of this form is optional.

FORM REFERENCE			
Form Type	**Reporting Group**	AQD Source ID (SRN)	**B7302**

REPORTING GROUP IDENTIFICATION			
AQD Reporting Group ID	**RG0071**	Reporting Group ID	**RGDIESEL-ENGINES**
Reporting Group Description	**Emergency diesel fired engines used in facility.**		

REPORTING GROUP EMISSION UNITS	
7. Emission Unit ID	**EUDIESELHOTOIL**
7. Emission Unit ID	**EUEMERGENCYGEN**
7. Emission Unit ID	**EUFIREPUMP**
7. Emission Unit ID	**EUCOMPRESSOR**

DEQ

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Activity Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Activity**	AQD Source ID (SRN)	**B7302**	EU ID	**RGDIESEL-ENGINES**

ACTIVITY INFORMATION			
Source Classification Code(SCC)	**20200102**		
SCC Comment	**Emergency diesel fired engines**		
SEASONAL MATERIAL USAGE SCHEDULE, IF THROUGHPUT IS > 0, THEN SEASONAL PERCENTAGES MUST TOTAL 100%			
Winter (Jan,Feb, Dec)	Spring (Mar-May)	Summer (Jun-Aug)	Fall (Sep-Nov)
25	**25**	**25**	**25**
OPERATING SCHEDULE			
Hours per Day	Days per Week	Days per Year	
1	**1**	**3**	
MATERIAL INFORMATION			
Material Code	Material Throughput	Unit Code	
DIESEL FUEL	**1.0117**	**E3 GAL**	
Material Description	**Low sulfur diesel fuel**		
VOC Content (coatings or solvent)	**% by Weight**	Density	**6.943 LB/GAL**
BTUs (fuel)	**129488 BTU/GAL**		
Sulfur Content (fuel)	**0.022 % by Weight**	Ash Content (fuel)	**% by Weight**

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emissions Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Emissions**	AQD Source ID (SRN)	**B7302**	EU ID	**RGDIESEL-ENGINES**
SCC	**20200102**	Material Code	**DIESEL FUEL**		

EMISSION INFORMATION			
Pollutant Code	**CO**	Annual Emissions	**128.77 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**1.30**	Exponent	**2**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**NOX**	Annual Emissions	**598.31 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**6.04**	Exponent	**2**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**PM10,FLTRBLE**	Annual Emissions	**42.1 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**4.25**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**PM2.5,FLTRBL**	Annual Emissions	**42.1 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**4.25**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

Michigan Department of Environmental Quality - Air Quality Division

Michigan Air Emissions Reporting System (MAERS)

2019 Emissions Form

Authorized under 1994 P.A. 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

FORM REFERENCE					
Form Type	**Emissions**	AQD Source ID (SRN)	**B7302**	EU ID	**RGDIESEL-ENGINES**
SCC	**20200102**	Material Code	**DIESEL FUEL**		

EMISSION INFORMATION			
Pollutant Code	**SO2**	Annual Emissions	**39.33 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**3.97**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**TOC**	Annual Emissions	**48.84 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**4.93**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EMISSION INFORMATION			
Pollutant Code	**VOC**	Annual Emissions	**48.84 LB**
Emission Basis	**MAERS EF**		
List Emission Factor	**4.93**	Exponent	**1**
Emission Factor Unit Code	**LB / E3 GAL**	Control Efficiency	**%**
Comment			

EGLE

INVENTORY YEAR:
1.

Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division
Michigan Air Emissions Reporting System (MAERS)

SV-101 STACK

Authorized under 1994 PA 451, as amended. Completion of information is required. Civil and/or criminal penalties possible for providing false information.

GENERAL INSTRUCTIONS: Refer to last year's MAERS forms or summary report for information previously submitted and complete this form with additions or corrections as necessary. For more detailed instructions refer to the MAERS Paper Forms and Instructions Booklet. This MAERS form is used to report stacks for a **specific inventory year**. Enter the **specific inventory year** in field 1.

FORM REFERENCE

2. Form Type **SV-101**	3. AQD Source ID (SRN)

STACK IDENTIFICATION

☐ Change ☐ Add

4. AQD Stack ID	5. Stack ID	6. Remove from MAERS	7. Dismantle Date (MM/DD/YYYY)
	SVSAQ	☐ Yes ☐ No	

8. Stack Description
Discharge stack from EUSAQ Strander clean-up baghouse.

9. Actual Stack Height Above Ground	10. Inside Stack Diameter
76 feet	40 inches
11. Exit Gas Temperature: Close to ambient degrees Fahrenheit	12. Actual Exit Gas Flow Rate: 30,000 ACFM cubic feet per minute

13. Stack Orientation: X☐ Vertical ☐ Vertical with No Loss Sleeve ☐ Vertical with Conical Cap ☐ Horizontal ☐ Goose Neck Downward

14. Latitude	15. Longitude	16. Horizontal Collection Method
44.592080 Decimal Degrees	-84.690611 Decimal Degrees	

17. Source Map Scale Number	18. Horizontal Accuracy Measure
	2 Meters
19. Horizontal Reference Datum Code	20. Reference Point Code

21A. Bypass Stack Only	21B. If yes, operator ID of main stack
☐ Yes X☐ No	

STACK IDENTIFICATION

☐ Change ☐ Add

4. AQD Stack ID	5. Stack ID	6. Remove from MAERS	7. Dismantle Date (MM/DD/YYYY)
	SV	☐ Yes ☐ No	

8. Operator's Stack Description

9. Actual Stack Height Above Ground	10. Inside Stack Diameter
feet	inches
11. Exit Gas Temperature: degrees Fahrenheit	12. Actual Exit Gas Flow Rate: cubic feet per minute

13. Stack Orientation: ☐ Vertical ☐ Vertical with No Loss Sleeve ☐ Vertical with Conical Cap ☐ Horizontal ☐ Goose Neck Downward

14. Latitude	15. Longitude	16. Horizontal Collection Method
_ _ ▪ _ _ _ _ _ _ Decimal Degrees	_ _ ▪ _ _ _ _ _ _ Decimal Degrees	

17. Source Map Scale Number	18. Horizontal Accuracy Measure
	Meters
19. Horizontal Reference Datum Code	20. Reference Point Code

21A. Bypass Stack Only	21B. If yes, operator ID of main stack
☐ Yes ☐ No	

A001.Part C: FGRICEMACT Calculations
Weyerhaeuser NR Company, Grayling Panels
8/4/2020

Table 1 to Subpart JJJJ of Part 60—NO_x, CO, and VOC Emission Standards for ...-Stationary Emergency Engines >25 HP

Emission Standard - EUGENERAC

g/HP-hr		
Nox	**CO**	**VOC**
10	387	NA

EUGENERAC Max HP = 29.5

lb/hr= (g/bhp-hr)*bhp_{max} x (1lb/454g)

Nox lb/hr	**PTE at 500 hrs.**
0.65	324.89
CO lb/hr	
25.15	12573.24

Nox lb/hr	**Actual hrs of operation for MAERS**
0.65	2.66
CO lb/hr	
25.15	103.10

Hours of operation: 4.1

Table 1 of §1039.101—Tier 4 Exhaust Emission Standards After the 2014 Model Year, g/kW-hr[1]

Emission Standard - EUCOMPRESSOR

Maximum engine power	**Application**	**PM**	**NO_x**	**NMHC**	**NO_x + NMHC**	**CO**
130 ≤kW ≤560	All	0.02	0.4	0.19		3.5

EUCOMPRESSOR kW	*227.4*
EUCOMPRESSOR HP	*305*
g/kW-hr to lb/HP	*0.001643987*

Hours of operation: 2.1

Weyerhaeuser NR Company
FGWOODHANDLING

2020 Baghouse Systems	ACFM	Install Date	Permit History
~~EUSAQ~~	~~30,000~~	~~8/21/17~~	Added - exempt under Rule 290(2)(a)(iii)
EUDRYFUEL			
Dry Fuel Surge bin	4,400	12/15/05	Replaced existing - exempt under Rule 285(d) 6/21/1993 PTI Supplement to Permit 138-93 application for odor abatement
Dry Fuel Silo	12,800	12/15/05	Replaced existing - exempt under Rule 285(d) 6/21/1993 PTI Supplement to Permit 138-93 application for odor abatement
EUCLEANUP			
Screens Baghouse	20,000	6/21/93	PTI Supplement to Permit 138-93 application for odor abatement
Drybin Cleanup	12,000	6/21/93	Original baghouse in PSD application FGWOODHANDLING
EUFLAQ	30,000	6/17/09	Added as exempt under Rule 290(2)(a)(iii). Baghouse was moved from the sander to the formline in 2009. Not using sander system any longer. Believe it was permitted but can't find records (7/27/2020)
EUMDI	33,000	7/14/12	Permitted with MDI line; used EF from NCASI
EUMATTRIM	35,000	8/1/90	Original baghouse in PSD application FGWOODHANDLING
EUFINISHING	30,000	11/14/95	Original baghouse in PSD application FGWOODHANDLING
Total air flow	177,200		

Proposed new permit calculation:

Using the total air flow rate of 207,200 AFCM, and conservatively assuming that the ACFM are equivalent to the flow rate at standard conditions, the particulate emission rate from all material handling sources is as follows:

177,200 ft3/min x 0.075 lb/gas/ft3 x 60min/hr x 0.002 lb/pm/1000 lb gas = **lb/hr**

Assuming an operating schedule of 8760 hours per year, 1.86 lb/hr =**8.1 tons PM**

Continuous Emissions Monitoring System

Quality Assurance And Quality Control Plan

Company: Weyerhaeuser OSB Site: Grayling, MI

System: Full Extractive

Revision Date: September 9, 2019

Table of Contents

Introduction

This Quality Assurance/Quality Control (QA/QC) Plan has been prepared to support the operation of the Continuous Emissions Monitoring Systems (CEMS) at Weyerhaeuser OSB Grayling, Michigan, installed on the Press Bio-filter stack and the Dryer RO stack for measurement of pollutant concentrations of THC and CO. The installation of both CEMS was completed in October 2014.

The EPA has established requirements for monitoring, record keeping, and reporting pollutant levels in flue gases emitted from affected units. The CEMS discussed in this manual are governed by the regulations established under *Title 40 Code of Federal Regulations Part 60* (40 CFR Part 60), Appendix B, Performance Specifications and Appendix F, Quality Assurance Procedures, which include general requirements for the installation, certification, operation, and maintenance of the CEMS.

Definitions of Quality Assurance and Quality Control

The QA procedures consist of two distinct and equally important functions.

Quality Assurance is the series of activities performed to evaluate the overall effectiveness of the maintenance and QC efforts. QC involves those activities undertaken to determine that the product or service is effective in maintaining an accurate and reliable output of CEMS data.

Quality Control functions are the control and improvement of the quality of the CEMS data by implementing QC policies and corrective actions. QC functions are often comprised of a series of frequent internal checks, such as system inspections, periodic calibrations, and routine maintenance. Quality Assurance involves less frequent external checks on product quality and is used to evaluate the total quality control process.

These two functions form a control loop: When the evaluation function indicates that the data quality is inadequate, the control effort must be increased until the data quality is acceptable. In order to provide uniformity in the assessment and reporting of data quality, this procedure explicitly specifies the assessment methods for response drift and accuracy.

External quality assurance evaluations may include independent system audits, third party sampling and analysis, and/or comparisons to known calibration standards.

Quality Assurance Policy

Weyerhaeuser OSB Grayling's policy is to efficiently operate and maintain its facilities in accordance with good operating practices (GOP) and applicable environmental regulations. Weyerhaeuser OSB Grayling is committed to ensuring that all environmental systems are operating within acceptable limits and that its operations are in compliance with operating and environmental permits.

Objective of Quality Assurance Plan

Weyerhaeuser OSB Grayling recognizes that the reliability and acceptability of CEMS data depends on completion of all activities stipulated in a well-defined QA plan. The objective of this QA plan is to define the necessary activities that guarantee CEMS data quality is maintained at acceptable levels. The plan also provides the framework for implementing QA activities by addressing items such as documentation, training, corrective actions, and preventive maintenance measures.

Scope of Quality Assurance Plan

This QA plan is specific to the operation and maintenance of the CEMS installed at Weyerhaeuser OSB Grayling, Michigan. The QA Plan goal is to obtain and evaluate emissions data of known and acceptable quality in support of the air pollution control equipment operation. The data obtained is used to demonstrate compliance with the following EPA, state and local emission and monitoring regulations:

40 CFR 60, Appendix B, (Relevant performance specifications) 40 CFR 60, Appendix F; Quality Assurance Procedures
Weyerhaeuser OSB Grayling Operating Permit MI-ROP-B7302-2016a

Additionally, this plan describes the necessary support services and activities, such as manual source testing, data reduction and report preparation, required to maintain data quality. However, this plan is not exhaustive in that some QA/QC activities are not discussed in detail here. Activities not fully discussed may include, but are not limited to, instrument maintenance, plant operating procedures, plant quality control procedures, and plant internal procedures for procurement and inventory control. These activities may be referenced in this QA Plan and may be updated, replaced, or deleted without notice or change to this plan.

Document Control

This QA/QC Plan includes procedures that ensure changes and revisions to this plan are communicated to all appropriate individuals. The Environmental Manager will be responsible for ensuring that all changes and revisions are incorporated in the basic document. Periodic review of this QA Plan will help to ensure that the QA process is working to provide efficient notice of required actions. Whenever inaccuracies occur for two consecutive quarters, Weyerhaeuser OSB Grayling must revise the current procedures or modify or replace the CEMS to correct the deficiency causing the excessive inaccuracies. The procedures must be kept on record and available for inspection by the enforcement agency.

This quality assurance plan must be reviewed and updated as changes occur. If revised, the revised QA plan must be submitted with the report of required annual quality assurance activities. Quality assurance plans for monitoring systems approved prior to the effective date of this manual revision must be submitted with the first report of required annual quality assurance activities conducted after such effective date.

Description of Facility, Control Equipment and CEMS

Facility

Weyerhaeuser's Grayling site located at 44° 35' 34" N 84° 41' 29" W is an Oriented Strand Board (OSB) panel manufacturing facility which began operations in 1982.

The facility has two emission points, regulated by Title V air permit MI-ROP-B7302-2016c, which require continuous emissions monitoring described in this QA/QC Monitoring plan. The RO stack is the final emissions point for the COEN process heater and four MEC strand dryer systems. The COEN and MEC burners are capable of using either natural gas or wood fines as fuel. The air stream from these systems is routed through a pollution fines collector before the gas stream is separated and treated by a quench tower, Wet Electro-Static Precipitator (WESP), de-mister, and Regenerative Thermal Oxidizer (RTO) before exhausting to atmosphere through the 150' RO Stack. The gas stream in the RO stack is subject to continuous emission monitoring of airflow, opacity, CO, and VOC's. The gases from the pressing area are captured and routed through a biological air filtration (BAF) unit commonly called a bio filter. Bacteria which occur naturally on the Douglas fir bark media in this bio filter consume VOC's as food as they are deposited on the bark by the passing airstream, which is then exhausted through the 199' press stack. The press exhaust stream is subject to continuous emission monitoring of airflow and VOC's.

Organization and Responsible Individuals

Certain individuals and groups at the facility will have designated responsibilities to ensure that QA/QC activities are performed as required by this QA program. The following is Weyerhaeuser Grayling's organizational structure of responsibilities:

Environmental Manager:

- Oversees the CEMS QA/QC program.
- Reviews all plans and reports for accuracy
- Prepares certification/recertification applications and notifications to required regulatory agencies.
- Stays abreast of EPA regulation updates that may affect the CEMS programs and interprets as required.
- Coordinates and schedules CEMS audits, diagnostic tests and certification/recertification tests as required.
- Reviews the quarterly CEMS reports prior to submittal.
- Submits quarterly reports and certification/recertification test results to the applicable regulatory agencies.
- Support and provides training in the administration and maintenance of the CEMS QA program and CEMS Standard Operating Procedures (SOP) documents.
- Reviews CEMS data for validity and makes any necessary corrections so the proper data will be entered in the quarterly reports.

- Ensures records are maintained for out-of-control conditions.
- Notifies the Plant Manager and the EGLE-AQD of any abnormal conditions that cannot be resolved within existing CEMS procedures in a reasonable amount of time.
- Maintains files of all plant CEMS data (hardcopy and electronic), reports, calibration gas certificates, etc. for three years as required by the Title V Permit.
- Notifies appropriate plant personnel of scheduled CEMS audits and certification/recertification tests.
- Arranges for support needed by contractor for periodic audits and certification/recertification tests.
- Provides plant resources to assist contractors during audits and certification/recertification testing.

Environmental Manager:

- Designates and manages employees and other resources needed to properly maintain and operate the CEMS.
- Reviews and approves all plant-specific CEMS plans, procedures, and reports.
- Ultimately responsible for ensuring that all routine preventive maintenance is completed on schedule.

Technician or Operator:

- Perform the daily checks on CEMS systems.
- Perform regular maintenance on equipment as recommended by each manufacturer.
- Address and report any abnormal conditions to the Environmental Manager or EHS Coordinator.
- Make appropriate entries into the maintenance log.
- Maintain the spare parts inventory.

CEMS Overview

The CEMS is an integrated system manufactured by Monitoring Solutions, Inc. whose headquarters are based in Indianapolis, IN. The following figures present a simplified illustration of the CEMS gas flow (reference system drawings for specific component detail).

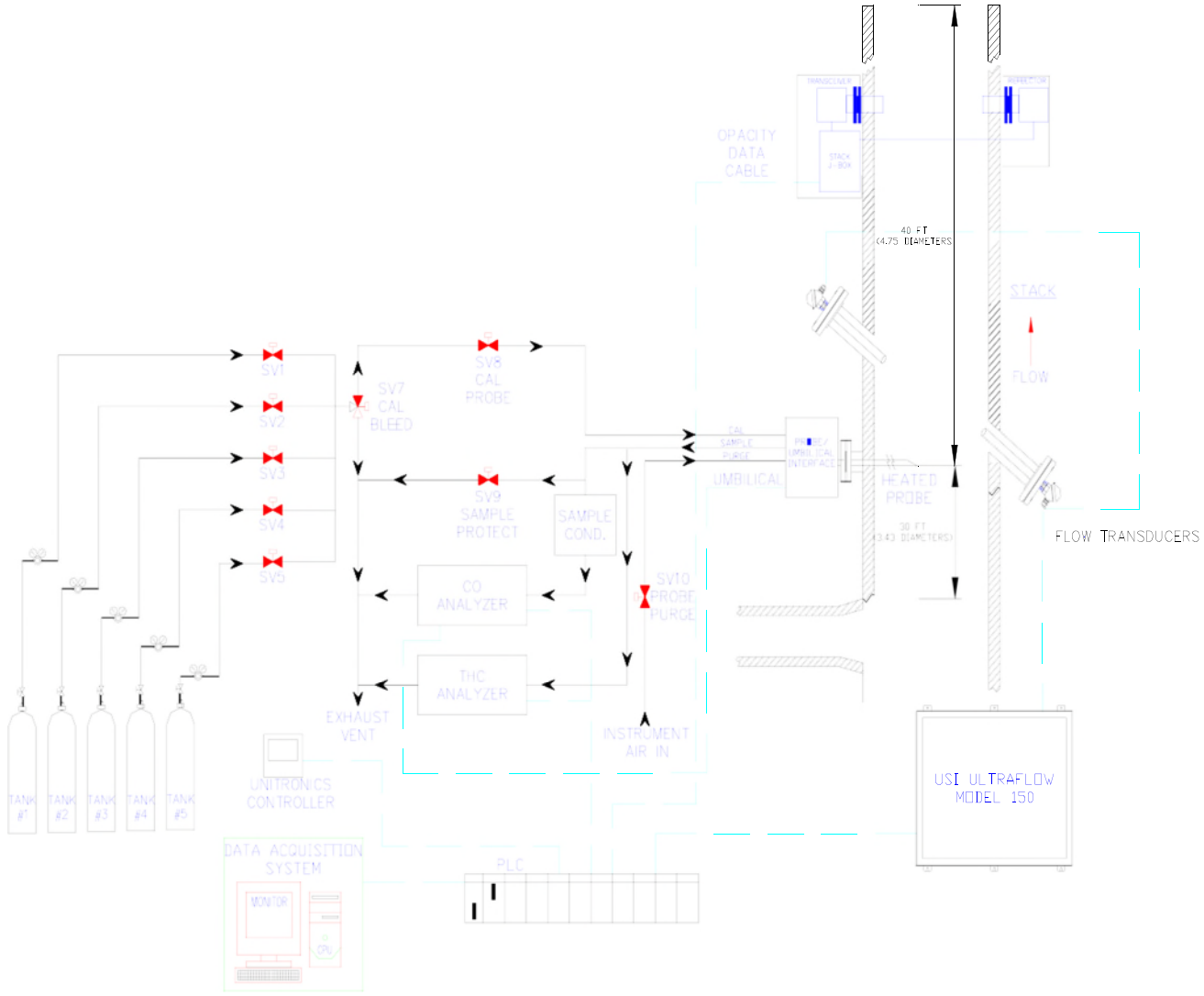

Figure 1. Dryer RO General CEMS Overview

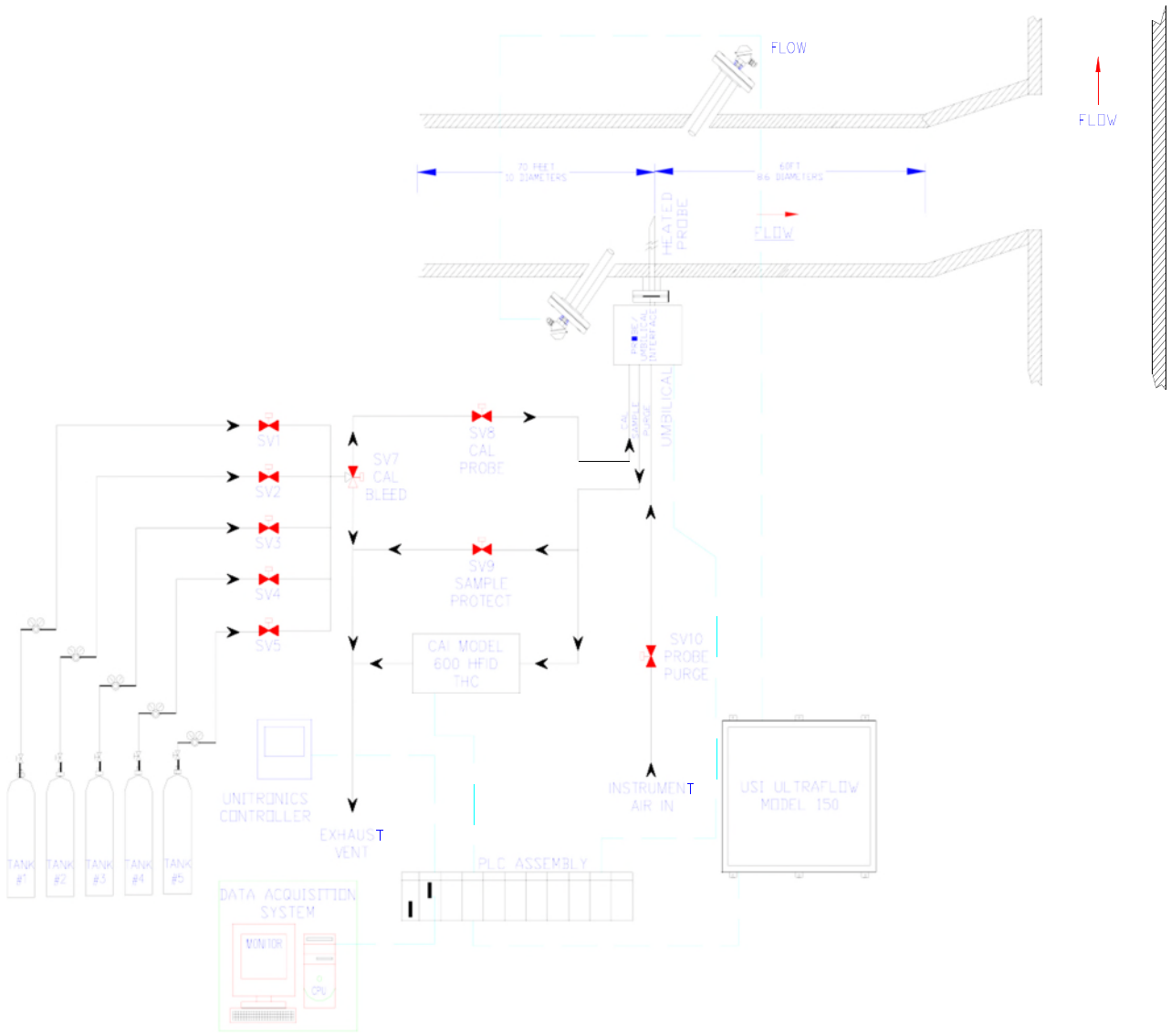

Figure 2. Bio-Filter CEMS General Overview

The RO stack has an internal diameter of 105 inches. The distance from the sampling probe to the nearest downstream disturbance is 40 feet. The distance to the nearest upstream disturbance is 30 feet.

The Press Bio-Filter duct has internal diameter of 84 inches. The distance from the sampling probe to the nearest downstream disturbance is 54 feet. The distance to the nearest upstream disturbance is 85 feet.

CEMS (Continuous Emission Monitoring System) - performs the extractive sampling and measuring of the flue gas. The *Sample probe* is inserted into the gas stream and extracts a continuous sample of flue gas. The sample pump creates a pressure differential (vacuum) used to extract gas from the stack. The extracted sample is transported via the *umbilical system* through a *gas sample conditioner* and *gas control panel* to specific *gas analyzers*.

The flue gas is protected by maintaining, or increasing the flue gas temperature as it is being transported (depending on the stack gas temperature). It is also necessary to prohibit the flue gas sample from coming into contact with any material that could alter the concentration of the sample until conditioning is complete. A heat trace installed in the umbilical, regulated by a rack mounted temperature controller, keeps the sample gas at a desired temperature above 220°F.

As the extracted gas enters the Sample Gas Conditioner it is cooled by a thermoelectric cooler (to remove moisture) with a temperature set point of +4°C, run through a particulate filter to remove any other sample contaminates and delivered to the gas control panel. A rotometer controls and monitors the sample flow rate to the CO analyzer. A gauge is provided to monitor sample pressure. The extracted gas for the THC analyzer bypasses the Sample Gas Conditioner and is delivered directly to the analyzer through a heated particulate filter. The gas control panel also controls the flow of excess sample to the sample vent. The sample vent is required to be connected to the outside of the system enclosure by the client.

CEMCON (Continuous Emission Monitoring CONtroller System) - automatically controls CEMS operations such as system purge (blow back) and calibration. The CEMCON system consists of a Unitronics V-130 controller with power supply and a multifunction keypad for operator interface.

A complete set of operation and maintenance manuals for all components of the system is maintained by the Instrumentation Department. These manuals provide complete descriptions of the system including theory, installation, operation, and maintenance.

AIR FLOW (the following description is copyrighted material from United Sciences, Inc., now owned by Teledyne Monitor Labs)

A Teledyne Ultraflow Model 150 airflow monitor was installed on the RO Stack (Serial Number 1501354) in May 2014 and the Press Biofilter outlet duct (Serial Number 1501355) in June 2014.

The Ultraflow Model 150 is a non-contacting gas flow and temperature monitor. Instead of using an S-Type pitot as described in Method 2, Method 1 was used to determine the location of the flow rate monitor. The system measures the transit times of ultrasonic tone bursts through the gas stream to determine velocity, flow volume, and gas temperature. Two transducers are placed across from each other on opposite sides of the stack/outlet duct. Each transducer acts alternately as a transmitter/receiver with the paths of the ultrasonic waves passing through the centroid of the duct. When a tone burst is sent through the gas stream from the upstream transducer to the downstream transducer, the movement of the gas stream reduces the time required to traverse the distance. When the tone burst is traveling against the gas stream from the upstream to the downstream transducer, the traverse time in increased. When there is no gas flow, the time required for the ultrasonic tone bursts to traverse the gas stream in either direction is the same.

As the upstream transducer transmits, the tone bursts travel to the downstream transducer. This time is measured by the Stack Electronics to an accuracy of ± 3 microseconds. When the downstream transducer transmits, the time for the tone burst to travel to the upstream transducer is also measured with the same accuracy.

The flow velocity is directly related to the difference in the time required for the tone bursts to go with and against the gas stream. Based on the cross-sectional area of the stack or duct, the flow velocity is converted to volumetric flow. This flow measurement is inherently independent of the temperature, density, viscosity, and particulate concentration. The flow volume measurement is an area-corrected parameter determined from the average flow velocity along the path between the two transducers.

The basic equations:

1.) $V_1 = Cs + Fv(\cos Ø)$

Velocity of sound from upstream to downstream transducer

2.) $V_2 = Cs - Fv(\cos Ø)$

Velocity of sound from downstream to upstream transducer

Where:

Cs = The speed of sound

Fv = Flue gas velocity

Ø = Transducer angle to flow

V = velocity of respective tone bursts

Ft = Traverse velocity vector = $Fv(\cos Ø)$

3.) Subtract equations 1 & 2: $V_1 - V_2 = 2\cos Ø(Fv)$ and solving for Fv:

4.) $Fv = \left(\frac{\quad}{V_1 - V_2} \right)$

$2\cos Ø$

substituting $V_1 = \frac{L}{t_1}$ and $V_2 = \frac{L}{t_2}$

5.) $Fv = \frac{L}{2\cos Ø} \left(\frac{t_2 - t_1}{t_2 t_1} \right)$

Fv is the line average velocity.

And: t = Transit times of sound between the transducers L= Distance between the transducers

Temperature Calculations:

Add the basic equations

1.) $V_1 = Cs + Fv(\cos Ø)$

2.) $V_2 = Cs - Fv(\cos Ø)$

and

6.) $V_1 + V_2 = 2Cs$

Solving for Cs and substituting

$$V_1 = \frac{L}{t_1} \text{ and } V_2 = \frac{L.}{t_2}$$

7,8) $$Cs = \frac{1}{2}\left(\frac{L}{t_1} + \frac{L}{t_2}\right)\frac{t_2 + t_1}{2}\left(\frac{\quad}{t_2 t_1}\right)$$

Calculate temperature using 9.) $T = r(Cs)^2$

Where r is a constant related to the specific heat ratio and the average molecular weight of the gas.

By knowing the time required to traverse the gas stream the speed of the sonic tone is calculated. The influence on the speed resulting from temperature is well established. Therefore, the temperature measurement is calculated directly from the speed of sound determination.

Volumetric and Mass Flow:

- Fv may be multiplied by the cross-sectional area to determine the actual volumetric flow, or ACFM
- Pressure and temperature can be used to correct the flow to standard conditions, or SCFM

The flow velocity Fv is now seen to be dependent upon only two variables: Transit Times t_1, t_2 and the duct geometry.

- The Ultraflow 150's drift specification is ≤ 1.0 % of reading over the useful life of the monitor.
- The Ultraflow 150's measurement is independent of the gas composition, temperature, and speed of sound.

Sample Probe

Description

The Model 34C Heated Filter Probe's primary function is to provide a heated environment to maintain sample gas temperatures above dew point and remove particulate material from the gas sample. The primary components of the probe are: the probe housing where extraction takes place, probe extension, probe heater, thermocouple to monitor temperature, an external regulated heater jacket, the sample pump, a two (2) micron filter and a single direct blowback system to clean the filter element.

The Model 34C comes with a blowback air accumulator tank and 2-way solenoid. To operate blowback, connect a 50-90 psig instrument airline to the blowback air accumulator tank. The customer controls blowback via a PLC or other means, such as the Operator Interface Controller. The 2-way blowback solenoid is rated for high temperature and 100 psig maximum pressure. The valve has a 1/8" orifice and the blowback instantaneous flow rate is 14scfh.

Separate 4" ports are provided on the stack/duct walls at appropriate points around the diameter and in line with the system sample probes for external audit and testing.

Calibration

To route calibration gas to the probe, open the user supplied calibration gas control valve, adjust the cylinder pressure not to exceed 35 psig, and adjust the calibration gas flow rate to 125% to 150% of the total gas sample flow rate (reference the system flow drawing for specific flow requirements).

Maintenance

Typical maintenance on the probe is to clean or replace the filter on a quarterly basis, more often, if necessary. Inspection of all tubing and wiring connections should also be performed. The ceramic filter, O-rings, and blowback solenoid are critical components and need to be part of the spare parts inventory.

Umbilical System

The umbilical is a bundle of pneumatic tubes and electrical wires used to interconnect the probe, the gas analyzers and gas transport system. The umbilical is heated to keep it flexible and free of condensation. The umbilical system contains the following lines:

a) One 3/8-in tube for transporting calibration gas to the probe.

b) One 3/8-in tube for transporting sample to the analyzers via the gas control panel and the analyzers.

c) One 3/8-in tube for transporting instrument / purge air to the probe.

Additional components of the umbilical system include the control wiring for the stack J-box and AC voltage for the probe and umbilical heaters. Two Type "K" thermocouple wires are provided for measuring the temperature of the umbilical and the probe heater. The tube/wire bundle is wrapped in an aluminized Mylar thermal barrier and is surrounded with thermal insulation. The total umbilical system is enclosed in a flexible fire-retardant jacket for protection. The power end is typically marked with yellow tape and the stack end marked with white tape.

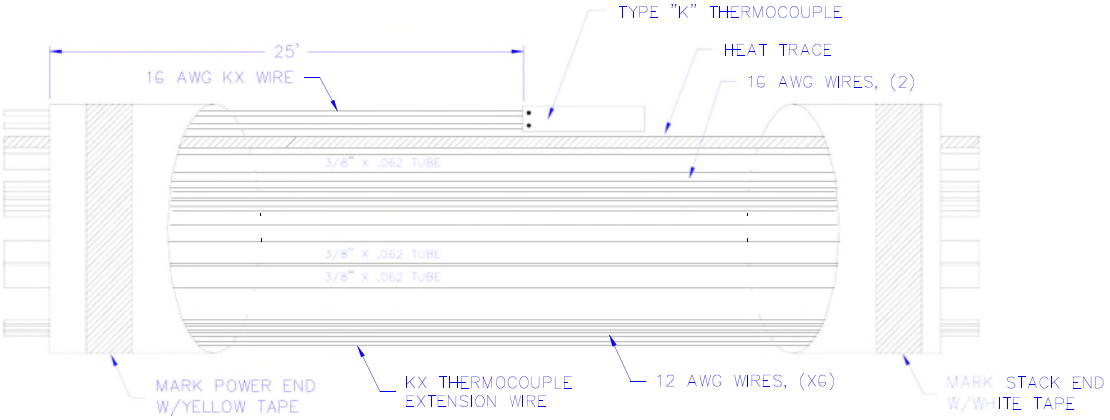

Figure 1. Full Extractive Umbilical

Maintenance Schedule

Preventive maintenance of the umbilical includes a visual inspection of the exterior for any damage or cuts to the outer jacket and any obvious kinking or low spots. Supports should also be considered during the inspection.

Heater Controllers

Figure 2. Auber Temperature Controller

Setup

Temperatures of the umbilical, probe, THC heated filter, are set by controls located in the system rack. The umbilical temperature should be set to a point between 275°F and 350°F. On a system that is analyzing low concentrations of CO gas emissions, the umbilical temperature set point should be set towards the lower end of the range. The umbilical temperature for both CEMS is set to 325°F.

The full extractive probe temperature should be set to a point between 300°F and 350°F.

For a system utilizing a THC heated filter, the normal probe temperature set point is 350°F. The temperature set point should not be set below 350°F.

Maintenance Schedule

There is no preventative maintenance required for the heater controller assembly. The heater controller systems utilize a solid-state relay. Both heater controller and relay need to be part of the spare parts inventory.

California Analytical Instruments Model 600-HFID THC Analyzer

Figure 3. Front Face, CAI Model 600-HFID THC Analyzer

Features

Operating Principle / Theory of Operation

The California Analytical model 600 HFID uses the flame ionization detection method of determination of total carbon (C) in a sample gas.

The detector is a burner that passes a regulated flow of sample gas, through a flame sustained by a regulated flow of hydrocarbon free air and fuel gas (40% H_2 and 60%He). The flame ionizes the hydrocarbon components of the sample gas, producing negatively charged electrons and positively charged ions. A 300-volt polarized electrode collects the ions, causing a very low current to flow. A precision amplifier measures this low current. This current flow is directly proportional to the carbon content of the sample.

The output from the VOC monitor is as ppm propane. This data is used as input to the air quality compliance computer which currently reduces and stores data from the monitors located on the dryers, as well as various production data. The computer is programmed to convert the output from the flow rate monitor (SCFM) and the VOC monitor (ppm VOC as propane) to pounds per hour VOC as carbon using the formula outlined below:

ppm(carbon) = ppm(propane)*3

lb/hr VOC = (ppm VOC as carbon)*(SCFM)*(mol. wt (12 lb/lb-mol))*(l/385.lcf/lb-mol)*(l/le+06)*(60 min/hr)

Description

The CAI Model 600 HFID Heated Total Hydrocarbon Analyzer utilizes a highly sensitive flame ionization detector (FID) for measuring gas Total Hydrocarbon (THC) concentrations in industrial emission applications.

The heated sample gas is maintained above its dew point by a self-contained internally adjustable temperature oven. The oven temperature is adjusted at the factory to be controlled at 190 ºC. The sample gas is maintained at this elevated temperature until it exits the FID's bypass outlet, thus preventing any loss of hydrocarbon concentration in the sample due to condensation.

General

The Model 600 HFID analyzer has a backlit 3 by 5-inch liquid crystal display and a 20-key data/operation input keypad. The microprocessor-controlled system has 16 digital inputs, 16 digital outputs, 16 analog inputs and 4 analog outputs.

The analyzer has four basic ranges that are scaled at the factory per the customer's order. These ranges can be re-scaled in the field at any time by the user through the analyzer's keypad. The analyzer's analog output signal (0-10VDC, 4-20mA, or 0-20mA) is scaled according to the selected range. The operating range of the analyzer can be selected through the keypad, by a contact closure, via the RS232 or TCP/IP interface or automatically when the analyzer is placed into the 'auto- range' mode of operation.

The analyzer can be manually operated from the keypad or remotely via discrete logic, RS-232C or TCP/IP communications. After turning on the analyzer, it needs at least 30 seconds for initialization. During this time, the screen is illuminated. This analyzer has an internal heated sample pump.

IMPORTANT TIP: When the analyzer is powered up, it defaults to access level 1 (User). To operate ALL parameters, check the access level.

This CAI Model 600 HFID is setup at the factory to use 40%/60% Hydrogen/Helium Fuel. Please make sure to use the CORRECT fuel (as specified on the fuel label affixed on the back panel of the analyzer.) Use of incorrect fuel WILL damage the instrument and COULD cause an explosion.

Maintenance Schedule

The normal preventative maintenance required for the analyzer involves changing the Teflon filter at the sample inlet. This part needs to be part of the spare parts inventory.

THC Heated Filter Assembly

Figure 4. THC Heated Filter Assembly (Internal)

Description

It is critical to maintain the temperature of the gas sample to prevent any loss of hydrocarbon concentration in the sample due to condensation. To do this, the stack gas for the THC sample is routed through a heated filter assembly. This assembly is mounted within an insulated metal enclosure along with a small heater. The temperature is maintained between 350°F and 400°F by utilizing a Type K thermocouple and a temperature controller similar to those utilized by the umbilical and probe heaters.

Maintenance Schedule

The preventative maintenance required for the assembly is noted in the maintenance schedule.

It is important to NOT handle the filter with bare hands. The oils may transfer to the filter and will cause erroneous readings.

California Analytical Instruments Model Series 600 CO Analyzer

Figure 5. Front Face, CAI Model 600 NDIR Analyzer

Description

The Model 600 series of NDIR analyzers incorporate a single-beam photometric system and a detector with a micro flow sensor assuring high reliability, sensitivity, accuracy, and stability.

The micro flow detector is a sealed unit filled with the same gas as the component of interest (in this case CO). The length of the sample cell determines the range for each component.

Infrared Gas Analyzer Theory of Operation

The infrared gas analyzer measures gas concentration based on the principle that each type of gas component shows a unique absorption line spectrum in the infrared region. The instrument consists of an infrared light source, a chopper, a measuring cell, and a detector filled with a gas mixture containing the gas component to be measured (in this case Carbon Monoxide). The infrared light source emits infrared light in all directions. The light emitted forward is transmitted and reflected into the detectors. The infrared light emitted backward is reflected by a reflecting surface and is added to the infrared light emitted forward. Arranged between the infrared light source and measuring cell is a chopper blade which rotates to modulate the infrared light beam at regular frequency. The modulated infrared light beam thus formed passes through the measuring cell filled with a sample gas where the light energy is partially absorbed or attenuated before it reaches the front chamber of the detector. Both the front and rear chambers of the detector are filled with the gas component to be measured. The infrared light energy is partially absorbed in the front chamber and residual light is absorbed in the rear chamber, thereby increasing pressure in both chambers. Since the detector is designed to produce a pressure difference between the front and rear chambers, a slight gas flow is produced through a path connecting these chambers with each other. This slight flow is converted into an AC electrical signal by a micro flow sensor arranged in the path connecting the chambers with each other. The AC signal is amplified and rectified to a DC voltage supplied to the output terminals and indicator. Amplitude is reduced as the concentration of measured gas component increases.

The output from the CO monitors is used as input to the existing compliance computer which also logs various production data. The computer is programmed to convert the output from the flow rate monitor (SCFM) and the CO monitor (ppm CO) to pounds per hour CO using the formula outlined below:

lb/hr CO = (ppm CO)*(SCFM)*(mol. wt (28 lb/lb-mol))*(l/385.1cf/lb-mol)*(l/le+06)*(60 min/hr)

Maintenance Schedule

The normal preventative maintenance required for the analyzer is to replace the Teflon filter at the sample inlet. Teflon filters need to be part of the spare parts inventory.

Gas Control Panel

Calibration and Purge solenoids

The gas control panel is used to route the calibration gases (both zero air and span gas) to the probe and to regulate the sample flow rate to each analyzer. The sample flow rate is regulated by a flowmeter for each analyzer and should be set to approximately one and one-half l pm for each analyzer. The zero air and the span gas flow are set and monitored by the CALIBRATION GAS flowmeter to approximately one l pm above the sum of the analyzer flows when cal to the probe is active.

The switching of the flows of zero, span, and purge gases is performed by solenoids mounted within the solenoid assembly. The high pressure/volume purge is controlled by a purge solenoid located in the stack probe box. High density Teflon tubing is used to interconnect the gas control panel and the solenoids.

Operator Interface Controller

The Operator Interface Controller controls the activation of the calibration and purge solenoids. Two contacts are provided to the client for remote activation of the Daily Calibration Check sequence and the Quarterly CGA sequence. These sequences, as well as activation of individual solenoids, can be performed manually by an operator at the controller.

The frequency and duration of the probe purges is set within the controller. A "First Purge of the Day" purge time is set and subsequent purges occur based on the frequency (in minutes) set in the controller.

Maintenance Schedule

There is typically no maintenance required for the Gas Control Panel, however, the solenoids should be considered when determining spare parts requirements

Operator Interface Controller

The Operator Interface Controller (OIC) controls the daily calibration check sequence, CGA (Cylinder Gas Audit) sequence, probe purges and individual calibration gas solenoid activation. Activating a calibration gas solenoid will route the corresponding calibration gas to the probe allowing the entire system to be checked. Response time can be affected by several variables including umbilical length, gas flow rate, pump pressure, and inline filters.

Figure 6. Operator Interface Controller Main Screen

Figure 7. Function Selection Screen

Daily Calibration Check Sequence

The daily calibration check sequence can be initiated at the controller by an operator or by remote contact closures to the controller (Reference System drawings for specific termination points). The sequence for a daily calibration check is Solenoid 1 > Solenoid 2 > Purge.

The duration to which each solenoid will be energized can be set by selecting each solenoid and setting the duration in minutes and seconds. The duration should be set to a time that will allow the system to respond and for the client recording device to collect an appropriate amount of data.

If a solenoid is not being utilized for the daily calibration check sequence, the duration can be set to 1 second. (See Section G.6 for purge duration.)

Figure 8. Daily Calibration Check Selection Screen

Figure 9. Daily Solenoid Duration Selection Screen

The time for each automatic daily calibration check is set to ensure that the calibration check is performed daily at the same time.

Figure 10. Daily Calibration Start Time Selection Screen

Figure 11. Daily Calibration Disable Screen

CGA Sequence

The cylinder gas audit sequence can be initiated at the controller by an operator or by remote contact closures to the controller (Reference System drawings for specific termination points). The sequence for a cylinder gas audit is Solenoid 1 > Solenoid 2 > Solenoid 3 > Solenoid 4, entire sequence will repeat twice for a total of three (3) runs.

Status of each solenoid, as well as the run number and remaining time for each solenoid will be shown on the CGA Solenoid Status screen during a CGA audit.

Figure 12. CGA Solenoid Status Screen

The duration to which each solenoid will be energized can be set by selecting each solenoid and setting the duration in minutes and seconds. If a solenoid is not being utilized for the cylinder gas audit sequence, the duration can be set to 1 second.

Quality Control Program

Dryer RTO/Press Biofilter Continuous Temperature Monitoring System

Weyerhaeuser NR Company
Grayling OSB
Grayling, Michigan

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1.0 QUALITY CONTROL PROGRAM OBJECTIVES

The following Quality Control Program is to assure that the continuous temperature monitoring systems located in the Dryer RTO combustion chamber and the Press Biofilter media bed at the Weyerhaeuser facility in Grayling Michigan operate in accordance with the requirements outlined in 40 CFR Part 63.8(d) "MACT General Requirements". The objectives of the program are to:

a) Assure compliance with the monitoring requirements of Subpart A – General Provisions of 40 CFR 63

b) Document procedures for monitoring system calibrations/verifications and adjustments

c) Assure that effective preventive maintenance procedures for the monitoring systems are in place to minimize any malfunctions, including spare parts inventories

d) Document procedures for data recording, calculations, and reporting

e) Document procedures for accuracy audits

f) Document corrective action procedures to be followed for malfunctioning monitoring systems

2.0 DOCUMENT CONTROL

This plan will be maintained for the life of the affected sources or until the affected sources are no longer subject to the provisions of 40 CFR 63. This plan will be made available for inspection upon request by the Administrator. All superseded versions of this plan will be maintained on file for a period of five years after the revision date.

3.0 CONTINUOUS MONITORING SYSTEM DESCRIPTION

Dryer RTO Combustion Chamber - The Clean Switch RTO's are two cell units with one cell on the inlet cycle and the other one on the outlet cycle. The flow remains this way for a set period of time, then the chambers switch by rotating the switch valve, inlet becoming outlet and outlet becoming inlet.

There are four calibrated thermocouples (High Temperature thermocouples -50 – 2300 Degree F) positioned in representative locations in the combustion chambers of each two-cell unit that are used to continuously monitor temperature. The four thermocouple readings are averaged together to obtain an average combustion chamber temperature for each of the two, two cell units. These are then averaged together to obtain the average combustion chamber temperature for the entire RTO.

Press Biofilter Bed - The biofilter consists of two identical media beds. Each bed temperature is continuously monitored by four calibrated thermocouples (Type T Thermocouple, 0 to 250 Degree F)

positioned in representative locations throughout the bed. These four thermocouple readings are averaged together to obtain a biofilter bed temperature and then averaged with the identical unit to obtain the average biofilter bed temperature.

4.0 ORGANIZATION AND RESPONSIBILITIES

The Weyerhaeuser Grayling Structurwood facility is staffed (24) hours per day (7) days per week. Four operations teams (E, S, P, and N) and one support team (A) working on rotating shifts manage facility operation and monitoring. Each operating team is staffed with trained operators and maintenance members to assure proper equipment operation and quick response to any malfunctions. Specific responsibilities assignments for this plan are listed below:

Position	**Responsibility**
Operations Manager	Overall
On-shift Team Members	Proper equipment operation
Functional Area Coaches	1. Corrective actions 2. Malfunction response 3. Documentation 4. Notify Environmental Manager
Environmental Manager	1. Content of this plan 2. Training team members 3. Maintaining documentation 4. Reporting to MDEQ 5. Assist team members in corrective action and malfunction response
Maintenance Services Team	1. The preventative maintenance and critical spares inventory for each source and control device

5.0 FACILITIES, EQUIPMENT, AND SPARE PARTS INVENTORY

The Grayling facility has an instrumentation shop capable of handling all repair and maintenance needs of the temperature monitoring systems. The shop is well stocked with various spare parts for the monitoring system and has various specialty tools and diagnostic monitors used for repair and maintenance activities. The spare parts inventory is monitored to keep the proper amount of parts in stock. A list of critical spares is included in the mill Start-up, Shut-down, Malfunction, Abatement Plan.

6.0 METHODS AND PROCEDURES, DATA ACQUISITION AND ANALYSIS

The continuous temperature monitoring systems are set up to meet the requirements for temperature monitoring set forth in 40 CFR 63.2269 (b). In the following sections the equipment, methods and procedures are covered in more detail.

6.1 THERMOCOUPLES

The thermocouples in the temperature monitoring systems have a minimum accuracy of plus or minus 4 Degrees F or 0.75% of the temperature value. All thermocouples have been located in a position that provides a representative temperature of the RTO combustion chamber or press biofilter bed.

6.2 DATA ACQUISITION SYSTEM

The Dryer RTO and Press Biofilter temperature data is collected in a dedicated Programmable Logic Computer (PLC). The data comes into the PLC using input modules which are accurate to +/- 0.1 % of full scale. The data is displayed in both the Energy Control Room and the Press Control Room on a dedicated display using a Wonderware application. The data points are stored in the PLC and on an IP 21 data historian. This system deposits its data into a database server where the information can be retrieved for reports and analysis. The system is powered by one or more Uninterruptible Power Supplies for reliability. The computer system alarms the operator of deviations and monitoring system malfunctions. The computer will record the date, time and the maximum reading of the event on an electronic database where the operator can describe the event along with any action taken to correct the upset or malfunction.

The mill continuously monitors RTO combustion temperatures using this system to demonstrate compliance with the operational limit established during stack performance testing. The temperatures from the combustion chamber thermocouples are averaged together and recorded every six seconds. A 15-minute block average is then calculated based on these six second temperature readings. At least 75% of the recorded six second readings for the 15-minute time interval must be available for a valid 15-minute block average. Temperatures recorded during periods of start-up, shutdown or malfunction (RTO bypass) or during period of monitoring system malfunction (e.g. thermocouple failure, PLC issues, etc.) are not be used in the 15-minute block average. Each 15-minute block average RTO combustion chamber temperature is written to the data historian and displayed on the operator screen. A 3-hour block average is then calculated based on all valid 15-minute block averages available for that time period and then compared to the operational limit to verify compliance. At least 75% of the 15-minute block averages for the 3-hour time interval must be available for a valid 3-hour block average. Each 3-hour block average is written to the data historian and displayed on the operator screen.

The mill continuously monitors biofilter bed temperatures using this system to demonstrate compliance with the operational limits established during stack performance testing. The temperatures from the four bed thermocouples in the North and South Biofilter are averaged together and recorded every six seconds. A 15-minute block average is then calculated based on these six second temperature readings. At least 75% of the recorded six second readings for the 15-minute time interval must be available for a valid 15-minute block average. Temperatures recorded during periods of press start-up, shutdown or malfunction or during periods of monitoring system malfunction (e.g. thermocouple failure, PLC issues, etc.) are not used in the 15-minute block average. Each 15-minute block average biofilter bed temperature is written to the data historian and displayed on the operator screen. A 24-hour block average is then calculated based on all of the valid 15-minute block averages available for that time period and then compared to the operational limits to verify compliance. At least 75% of the 15-minute block averages for the 24-hour time interval must be available for a valid 24-hour block average. Each 2-hour block average is written to the data historian and displayed on the operator screen.

7.0 PREVENTATIVE MAINTENANCE, CALIBRATION AND QUALITY CONTROL CHECKS

The calibration and quality control requirements of the continuous temperature monitoring systems are performed in accordance with manufactures set guidelines and 40 CFR 63.2269 (b).

7.1 TEMPERATURE SENSOR CALIBRATION/VALIDATION

There are redundant thermocouples installed in both the RTO and Press Biofilter used to conduct continual validation checks of the temperature monitoring system. These redundant sensors are placed nearby the process temperature sensors and are wired to the PLC. Data from the redundant sensors are compared to the process sensors and an alarm is sent to the operators whenever the difference is greater than 30 Degrees F. Such validation alarms are treated as monitoring system malfunctions and are diagnosed and corrected immediately.

Calibration and validation checks are also done any time a sensor exceeds the manufacturer's specified operating temperature range, or a new temperature sensor is installed.

The accuracy of the temperature sensor is established with an electronic calibration instrument. A hand-held Fluke Model 724 temperature calibrator is used to check the accuracy of each thermocouple used in the RTO and biofilter.

For thermocouples wired directly to an 800 Series or Quantum PLC Thermocouple Card, the hand-held meter is connected to the thermocouple to compare the direct temperature measurement from the

thermocouple with the value registered on the PLC. If the temperature difference between the hand-held meter and the PLC is more than +/- 30° F of the value measured, the problem will be diagnosed, corrected and rechecked. The hand-held meter will then be used to send a signal to the PLC corresponding to a zero and high-level value (100% of span). If the zero and high-level check yields values on the PLC more than +/- 30° F of the span of the thermocouple, the problem will be diagnosed, corrected and rechecked.

For thermocouples wired to a 4 – 20 milli-volt PLC input card with a Rosemont signal transmitter, the hand-held meter will be used to send a signal corresponding to a zero and high-level value (100% of span) to the to the Rosemont transmitter. The transmitter outputs will then be checked and adjusted as necessary to the zero and high-level values.

Electronic temperature calibration checks are performed semi-annually.

7.2 PREVENTIVE MAINTENANCE AND INSPECTIONS

Each Quarter, all components of the temperature monitoring system are inspected. This inspection includes all electrical connections for continuity, oxidation and galvanic corrosion. Results of these inspections are documented in the mill's work order system

Each day, operators verify that the temperature monitor is responding. This activity is also performed automatically by the PLC.

8.0 CORRECTIVE ACTION PROGRAM

The steps for resolving and reporting malfunctions of the monitoring system equipment are:

Step #1: When a Team Member identifies a malfunction, they take immediate steps to correct the situation. If the Team Member is unable to correct the malfunction and additional resources are required, the appropriate Maintenance Team member(s) is notified.

Step #2: The Maintenance or team member will notify the Environmental Manager if the control device malfunction lasts for over 2-hours.

Step #3: The Environmental Manager verbally notifies the MDEQ- Air Quality Division Engineer within 24-hours or as soon as possible. The Environmental Manager follows up with a written report in 7 days that indicates:

a) The probable cause of the malfunction

b) The actions taken to correct the malfunction

c) Steps taken to prevent a re-occurrence

Detailed corrective action procedures are documented in the mill's Start-up/Shut-down/Malfunction Plan.

***Record of revisions*:**

Date	***Description***	***Section(s) affected***
3/20/19	Review/revised	All, Sections 3 and 4
4/28/2015	Review	All
11/16/11	Review	All
6/2/2010	Review	All
6/9/2009	Review	All
6/4/09	Updated Team makeup	Section 4
12/10/2007	Discussion Draft	All
12/20/07	Corrected monitor spans and specs. /issue	Section 7

SRN: B7302	Section Number (if applicable):

PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☒ Yes ☐ No

If No, go to Part E.

Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).

Emission Unit ID	**Emission Unit Description**	**Rule 212(4) Citation** [e.g. Rule 212(4)(c)]	**Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)]
EUSAQ	STJ Tubejet 378 Filter, 30,000 acfm, 125HP, 1785 RPM Balder Motor, Vertical discharge 40"x14' 4" no loss rain stack. 16' 7 5/8" above roof line	212(4)(h)	285(2)(f)

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID: