BILLERUD

Billerud Quinnesec LLC
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Paula LaFleur
Environmental Supervisor

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September 30, 2024

Mr. Michael Conklin
EGLE - Air Quality Division
1504 W. Washington St., Suites A & B
Marquette, MI 49855

Subject: Title V ROP Renewal Application SRN B7192, Billerud Quinnesec, LLC and Specialty Minerals Inc.

Dear Mr. Conklin:

Enclosed is the ROP renewal application for Billerud Quinnesec, LLC (Section 1) and Specialty Minerals Inc. (Section 2) which currently operate under permit number MI-ROP-B7192-2020b. This permit expires on June 11, 2025. Please note the application was also submitted electronically per EGLE AQD Electronic Document Submission Guidance. PTI99-20B emission inventory spreadsheets were only submitted electronically per our pre-application meeting discussion.

The application includes the following:

1. EQP 6000 Application forms for Sections 1 and 2.
2. Summary of Proposed Revisions
3. ROP Mark-Up
4. PTI99-20B
5. Billerud Quinnesec CAM Plans
6. Billerud Quinnesec Fugitive Dust Plan
7. Billerud Quinnesec Malfunction Abatement Plans
8. Billerud Quinnesec Risk Management Plan
9. Billerud Quinnesec LDAR Inspection Plan
10. Billerud Quinnesec MACT CMS QC Plan
11. Billerud Quinnesec Boiler MACT SSMP
12. Billerud Quinnesec Boiler MACT Fuel Sampling and Analysis Plan
13. Billerud Quinnesec Stationary Engine Plan
14. Billerud Quinnesec CEMS-COMS QA Program
15. Billerud Quinnesec Paper Machine GOP for PM Minimization

If you have any questions or require any additional information, please contact me at (906) 779-3494.

Sincerely,

Paula LaFleur
Environmental Supervisor

Summary of Proposed Revisions to MI-ROP-B7192-2020b

Following is a list of proposed revisions to MI-ROP-B7192-2020b which are outside of the specific revisions associated with PTI99-20B, as written. These revisions, along with those associated with PTI99-20B are included in the ROP mark-up.

1. Emission Unit Summary Table and associated Emissions Unit sections: Add FGPULPINGMOD-1 to the flexible group column for the following emission units: EU0407-1 White Liquor Oxidation System, EU0508-1 Bleach Plant Process, EU0513-1 Bleach Plant Process Extraction Tower, EU0514-1 Bleach Plant Process Extraction Washer, EU0610-1 Chlorine Dioxide Generating Plant, EU0611-1 Methanol Storage Tank, EU0815-1 Chemical Recovery Furnace, EU0816—Smelt Dissolving Tank, EU0917-1 Lime Kiln, EU1019-1 Slaker, EU1121-1 Waste Fuel Boiler, EU1227-1 Q41 Paper Machine, and EU1882-1 Pulp Dryer. These are the emission units associated with 10-year emissions tracking for PTI 99-20B FGPULPINGMOD-1.

2. Emission Unit Summary Table and associated Emission Unit sections: Remove FGWFBMOD-1 flexible group from the flexible group column for the following emission units: EU1121-1 Waste Fuel Boiler, EU1128-1 Purchased Fuel Hogging Operations, and EUCOOLTWR-1 Cooling Tower. This flexible group was created for 10-year emissions tracing associated with PTI100-10, which was complete in 2021. (See application H16)

3. EU0917-1 Lime Kiln Monitoring/Recordkeeping SC VI.2, VI.3, and VI.8: Added CAM citations to cover the associated monitoring and recordkeeping associated with the Lime Kiln CAM plan added as a result of PTI99-20B particulate emission limits specified in the Emissions Limit table at I.7, I.9, and I.11. (See application H16)

4. EU0917-1 Lime Kiln Reporting section: Added SC VII.8 and VII.9 to cover the CAM reporting requirements associated with the Lime Kiln CAM plan added as a result of PTI99-20B for the particulate emission limits specified in the Emissions Limit table at I.7, I.9, and I.11. (See application H16)

5. EU1121-1 Waste Fuel Boiler Emissions Limits table: Revised Boiler MACT, 40 CFR 63.7500 emissions limits I.2, I.4, I.15, and I.16 to reflect 40 CFR Subpart DDDDD 10/6/22 rule revisions to the emissions limits in table 2 to the rule. Also added footnote d to the Emissions Limit table consistent with footnote d to table 2 in the rule. (See application form H8)

6. References to wood "refuse": Per 9/20/24 pre-application discussion with Michael Conklin, propose to change "refuse" to "residuals" because the word refuse connotates a waste or discarded material, which is not appropriate for the wood biomass fuel processed, purchased, and burned in the EU1121-1 Waste Fuel Boiler. This change is noted in the following sections in the ROP mark-up:

    a. Section 1 Emission Unit Summary Table descriptions for EU1121-1, EU1124-1, and EU1128-1
    b. EU1121-1 Description and SCs III.3, V.3, VI.6
    c. EU1128-1 Description and SCs II.1, VI.8
    d. FG2334-1 SCs III.1, III.2, III.4, III.6
    e. FGSOLIDFUEL-1 Emissions Units list
    f. Section 2 Emissions Unit Summary Table description for EU2550-2
    g. EU2550-2 Description
    h. EU2551-2 Description

7. EU1121-1 Waste Fuel Boiler Monitoring/Recordkeeping SCVI.10: For clarity added the 40 CFR Subpart DDDDD opacity limit language to this monitoring requirement. This opacity limit has been applicable but not previously noted in the ROP. (See application form H13)

8. EU1882-1 Q40 Pulp Dryer: This existing emission unit and associated conditions were added to the ROP during the PTI99-20 process. However, there was a typo in the Emissions Limit table "*" note which was overlooked and issued with the PTI. The typo references a particulate emission factor used in the permit application pulp dryer emissions calculations for PTI 99-20 (99-20A, and 99-20B also). The emissions calculations for the application used a PM factor of 0.02 lb PM/ton pulp. This was extrapolated into the 12-month rolling PM limit of 3.25 tons/year based on the pulp material limit of 325,000 tons/year (on a 12-month rolling time period). The PTI was issued with the emissions factor specified as 0.022 lb PM/ton pulp. (See application form H8)

9. Flexible Group Summary Table: Remove FGWFBMOD-1. This flexible group was associated with 10-year emissions tracking for PTI100-10, which was complete in 2021.

10. FG2334-1 CVG System Process/Operation Restriction SC III.6: Add "combustion air" to reflect the rule language that CVGs can also be added with the combustion air, per 40 CFR 63.443(d)(4)(ii). (See application form H10)

11. FG2335-1 DVG System Process/Operation Restriction SC III.4: Add "combustion air" to reflect the rule language that DVGs can also be added with the combustion air, per 40 CFR 63.443(d)(4)(ii). (See application form H10)

12. FGCIRICEMACT-1 SC III.1.a, b, and c: Per 8/30/24 revisions to 40 CFR 63 Subpart ZZZZ table 2c, the time period specified for work practices was changed from "annual" to "within 1 year + 30 days of the previous inspection". (See application form H10)

13. FGSIRICEMACT-1 SC III.3.a, b, and c: Per 8/30/24 revisions to 40 CFR 63 Subpart ZZZZ table 2c, the time period specified for work practices was changed from "annual" to "within 1 year + 30 days of the previous inspection". (See application form H10)

14. FGWFBMOD-1 Flexible Group Conditions: Remove this entire section. This flexible group was associated with 10-year emissions tracking for PTI100-10, which was complete in 2021. (See application form H13, H14, and H16)

15. Non-applicable Requirements Table E: Remove EU0917-1 (Lime Kiln) from the emission units noted as non-applicable to the 40 CFR Part 64 CAM requirements. Lime Kiln CAM provisions were added as a result of PTI99-20B for the particulate emission limits specified in the EU0917-1 Emissions Limit table at I.7, I.9, and I.11. (See application C10)

16. Appendix 6-1 Permits to Install: Removed PTI55-12B which was issued in 2018, prior to MI-ROP-B7192-2020. Added PTI 99-20B.

17. Appendix 12-1 Recordkeeping Provisions for PSD Source Using Actual to Projected-Actual Applicability Test: Remove the recordkeeping associated with PTI100-10, which was complete in 2021. Add the recordkeeping provisions associated with PTI99-20B.

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)
B7192	2621	322121	MI-ROP-B7192-2020b	1

Source Name: Billerud Quinnesec LLC

Street Address: W-6791 US Highway 2

City	State	ZIP Code	County
Quinnesec	MI	49876	Dickinson

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

Source Description: Billerud Quinnesec LLC is an integrated pulp and paper facility. Products include hardwood market pulp and coated paper.

☐ 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)
Billerud Americas Corporation	1

Mailing address (☐ check if same as source address): 8540 Gander Creek Drive

City	State	ZIP Code	County	Country
Miamisburg	OH	45342	Montgomery	USA

☐ 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: B7192	Section Number (if applicable): 1

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	
Paula LaFleur			Environmental Supervisor	
Company Name & Mailing address (☐ check if same as source address)				
Billerud Quinnesec LLC, PO Box 191				
City	State	ZIP Code	County	Country
Norway	MI	49870	Dickinson	USA
Phone number		E-mail address		
906-779-3494		paula.lafleur@billerud.com		

Contact 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		

RESPONSIBLE OFFICIAL INFORMATION

Responsible Official 1 Name			Title	
Dennis Perpich			Mill Manager	
Company Name & Mailing address (☐ check if same as source address)				
Billerud Quinnesec LLC, PO Box 191				
City	State	ZIP Code	County	Country
Norway	MI	49870	Dickinson	USA
Phone number		E-mail address		
906-779-3201		dennis.perpich@billerud.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:

SRN: B7192	Section Number (if applicable): 1

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)

Dennis Perpich, 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.

Dennis L Perpich. — **Signature of Responsible Official**

9/30/2024 — **Date**

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) 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 ☒ 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. Is an Acid Rain Permit Renewal Application included with this application?	☐ Yes ☒ No ☐ 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 EGLE, 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. Is a CAM plan included with this application? 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	☒ Yes ☐ No ☒ Yes ☐ No ☒ ☐
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-**C4,C5, C8,C10

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)]
12-PU-126	Finishing Pulper, 11,000 gal	Rule 212(4)(d)	Rule 284(2)(i)
23-TK-020	Diesel Fuel Tank, 10,000 gal	Rule 212(4)(d)	Rule 284(2)(g)(i)
23-TK-021	Unleaded Gasoline Tank, 10,000 gal	Rule 212(4)(d)	Rule 284(2)(g)(i)
EU-SPACEHTRS	90 Natural Gas Heaters. All heaters less than 2 MMBTU/hr.	Rule 212(4)(c)	Rule 282(2)(b)(i)
EU-PROPFURN	3 Propane Duct Furnaces all less than 1 MMBTU/hr	Rule 212(4)(c)	Rule 282(2)(b)(i)
23-CU-005	Admin Building Gas Boiler, 6 MMBTU/hr	Rule 212(4)(c)	Rule 282(2)(b)(i)
12-MS-077	Deaerator (dilute paper machine whitewater slurry prior to headbox)	Rule 212(4)(d)	Rule 284(2)(i)
12-MS-087	White Water Filter	Rule 212(4)(d)	Rule 284(2)(i)
12-MS-093	Vacuum Pump Trench	Rule 212(4)(d)	Rule 284(2)(i)
12-MS-116	Vacuum Pump Seal Water Cooling Tower	Rule 212(4)(d)	Rule 284(2)(i)
12-PU-047	Off Machine Silo (polishing additive system for dilute paper machine whitewater slurry)	Rule 212(4)(d)	Rule 284(2)(i)
12-PU-071	Off Machine Silo (Polishing Additive System for Dilute Paper Machine Whitewater Slurry)	Rule 212(4)(d)	Rule 284(2)(i)
12-23-PU-024	Fuel Pump - Regular Gas	Rule 212(4)(d)	284(2)(g)(ii)
23-PU-025	Fuel Pump - Unleaded Gas	Rule 212(4)(d)	284(2)(g)(ii)

Comments:

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

SRN: B7192	Section Number (if applicable): 1

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:

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

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
99-20B (see comments below)	FGPULPINGMOD-1 (see PTI 99-20B for modified and affected emitting units)	Permit for equipment modifications and capacity increase. See comments below and PTI-99-20B for additional detail. All control equipment and monitoring is specified in the ROP mark-up.	8/19/22 for startup of all modified equipment

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: Background for PTI 99-20B -

- PTI 99-20 was issued August 17, 2021 – This PSD permit allowed for physical modifications to Billerud's EU204-1 Digester, EU0368-1 Brownstock Washing, EU0460-1 O2 Delignification, EU0765-1 Evaporator System, and EU0815-1 Chemical Recovery Furnace with other equipment affected, along with associated production increases. In addition, the mill's existing Pulp Dryer, EU1882-1 was included as an affected unit – while an existing unit, EU1882-1 was not previously included in the ROP.

- PTI 99-20A superseded 99-20 and was issued July 14, 2022 – This permit added EU1227-1 Paper Machine modifications to the permitted scope of PTI 99-20.

- PTI 99-20B superseded 99-20A and was issued January 11, 2023 – This permit included administrative amendments, corrections, and clarifications to PTI 99-20A. This PTI encompasses all changes from the three PTIs. **All PTI ROP changes associated with PTI 99-20B are included in the ROP mark-up.**

FGPULPINGMOD-1 was created with PTI99-20B to track emissions associated with reasonable possibility for this permit. All affected and modified emitting units associated with PTI99-20B are listed in the ROP mark-up, Appendix 6-1, and in PTI99-20B submitted in conjunction with this application.

☒ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**F3

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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		

Comments:

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

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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.	☐ Yes	☒ No

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

The EU1121-1 Waste Fuel Boiler emission limits for 40 CFR 63 Subpart DDDDD have been updated in the markup to reflect the associated October 6, 2022 rule revisions. See EU1121-1 SC I.2, I.4, I.15, I.16 and added footnote (d) to the Emissions Limit table.

The PTI 99-20B EU1882-1 Pulp Dryer Table I * referenced emission factor should be 0.002, not 0.0022. The PTE PM limit of 3.25 tpy is based upon the material limit of 325,000 tons pulp per year and a PM emission factor of 0.02 lbs PM/ton pulp. Table I reference to 0.0022 appears to be a typo. See the "Quinnesec Mill Production Increase Emissions Inventory (2-14-22) spreadsheet.

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

None other than those specified by PTI 99-20B.

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

For FG2334-1 SC III.6 and FG2335-1 SC III.4 propose to add “or combustion air” as per rule at 40 CFR 63.443(d)(4)(ii).

For FGCIRICEMACT-1 SC III.1.a, b, and c, and FGSIRICEMACT-1 SC III.3.a, b, and c, updated the work practice frequency language per the 8/30/24 40 CFR 63 ZZZZ table 2c rule revisions: the frequency was changed from “annual” to “within 1 year + 30 days”.

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

None other than those specified by PTI 99-20B.

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

None other than those specified by PTI 99-20B.

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

Propose to modify wording in EU1121-1 SC VI.10 to call out the specific opacity operating limit of 10% on a daily block average per 40 CFR 63 subpart DDDDD.

Propose to delete the recordkeeping associated with flexible group FGWFBMOD-1. This 10-year recordkeeping associated with PTI100-10 was complete in 2021 and is no longer required.

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

Propose to delete the reporting requirements associated with flexible group FGWFBMOD-1. This 10-year reporting associated with PTI100-10 was complete in 2021 and is no longer required.

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

None other than those specified by PTI 99-20B. Please note the typo corrections associated with the EU1227-1 Paper Machine release points in PTI99-20B. These have been noted and corrected in the ROP mark-up.

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

Propose to delete flexible group FGWFBMOD-1 and all associated conditions and references. This flexible group was associated with PTI100-10 and created for 10-year emissions tracking which was complete in 2021.

Propose to add CAM citations to EU0917-1 Lime Kiln SCs VI.2, VI.3, and VI.8 and add SC VII.8 and VII.9 to cover the CAM reporting requirements. The Lime Kiln became subject to CAM for PTI99-20B particulate emissions limits.

Propose to change the phrase wood “refuse” to wood “residuals” wherever it appears in the ROP. The word refuse connotates a waste or discarded material, which is not appropriate for the wood biomass which is purchased, processed, or burned in Quinnesec’s EU1121-1 Waste Fuel Boiler.

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-**

EGLE

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: B7192	Section Number (if applicable): 1

1. Additional Information ID
AI-C4,C5

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Attached PTI 99-20B contains the revised emissions limits for added or modified equipment. Per EGLE pre-application meeting discussion, two Excel spreadsheets (noted below) containing the PTI CAP and HAP PTE emissions have been submitted to Michael Conklin, District Supervisor, along with the electronic application package submittal.

PTI99-20B Emissions Inventory (2-14-22)
PTI99-20B Toxics Inventory (10-21-21)

EGLE

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: B7192	Section Number (if applicable): 1

1. Additional Information ID
AI-C8

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

The following emission units are subject to CAM monitoring:

- Chip Screening Operations (EU0101-1)
- Chip Production Operations (EU0102-1)
- Chemical Recovery Furnace (EU0815-1)
- Smelt Dissolving Tank (EU0816-1)
- Lime Kiln (EU0917-1)
- Coal Crusher/Unloading and Handling Operations (EU1125-1)
- Fuel Hogging Operations (EU1127-1)
- Hogged Fuel/Coal Transfer Operations (EU1137-1)
- Purchased Fuel Hogging Operations (EU1128-1)

The CAM Plan has been updated to reflect additional CAM provisions for the Lime Kiln as a result of PTI 99-20B.

The CAM Plan below is attached for reference:
Billerud Quinnesec CAM Plan

EGLE

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: B7192	Section Number (if applicable): 1

1. Additional Information ID
AI-C10

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Note that Table E in the ROP mark-up contains the information specified below.

Emission Unit / Non-Applicable Requirement / Justification:

EU0611-1 / 40 CFR Part 60 Subpart Kb / Storage tank is less than 151 m3 and the maximum true vapor pressure of the liquid is less than 15.0 kPa.

EU0611-1 / 40 CFR Part 63 Subpart EEEE / USEPA interpretation: Methanol storage associated with ClO2 systems are subject to 40 CFR Part 63, Subpart S, therefore are not subject Subpart EEEE.

EU0815-1 / Rule 336.1801 / The Recovery Furnace does not meet the fossil-fuel-fired definition in the rule because it burns less than 50% fossil fuel.

EU0917-1 / Rule 336.1801 / The Lime Kiln does not meet the R 336.1801 because it is rated at less than 250 MMBtu/hr heat input.

EU1122-1 / Rule R 336.1801 / The Package Boiler is subject to an NSPS standard more stringent than R 336.1801, rendering the requirement non – applicable under R 336.1801(14)(a).

EU1127-1 / 40 CFR Part 63 Subpart JJJJ / USEPA has interpreted that on-machine coating/sizing press operations are considered substrate formation and are not subject to Subpart JJJJ

EU1127-1 / 40 CFR Part 63 Subpart HHHHH / Q41 coating preparation is related to substrate formation and not subject to Subpart HHHHH

EU0106-1, EU0204-1, EU0205-1, EU0368-1, EU0407-1, EU0508-1, EU0610-1, EU0765-1, EU0766-1, EU0767-1, EU1019-1, EU1122-1, EU1228-1, EU1229-1, EU1239-1, EU1240-1, FG2334-1, FG2335-1, EU2336-1, EU1121-1 / 40 CFR Part 64 / The emission units are not subject to Compliance Assurance Monitoring requirements based on the uncontrolled emission rate and/or existing monitoring requirements.

EGLE

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: B7192	Section Number (if applicable): 1

1. Additional Information ID
AI-F3

Additional Information

2. Is This Information Confidential? ☐ Yes ☒ No

Per ROP Application form item F3, attached to this application is a copy of PTI99-20B.

Per EGLE direction, PTI99-20B is to be rolled into the ROP during this renewal as a minor modification under Rule 216(2). The M-001 and C-001 forms were submitted to EGLE on 8/24/23. All conditions associated with PTI99-20B are included in the ROP mark-up submitted with this application.

ROP No: MI-ROP-B7192-2020b
Expiration Date: June 11, 2025
PTI No: MI-PTI-B7192-2020b

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

EFFECTIVE DATE: ~~June 11, 2020~~Insert latest date
REVISION DATES: ~~June 6, 2022; October 17, 2022~~

ISSUED TO

Billerud Quinnesec, LLC, and
Specialty Minerals (Michigan) Inc.

State Registration Number (SRN): B7192

LOCATED AT

W-6791 US Highway 2 and W-6705 US Highway 2, Quinnesec, Dickinson County, Michigan 49876

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-B7192-~~2020b~~2025

Expiration Date: ~~June 11, 2025~~Insert expiration date

Administratively Complete ROP Renewal Application Due Between
~~December 11, 2023 and December 11, 2024~~ Insert appropriate dates

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 Rule 210(1) of the administrative rules promulgated under Act 451, 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-B7192-~~2020b~~2025

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(1) of Act 451. Pursuant to Rule 214a of the administrative rules promulgated under Act 451, 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 Environment, Great Lakes, and Energy

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_____
Michael Conklin, Acting Marquette District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/or is state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

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SECTION 1 – BILLERUD QUINNESEC, LLC

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A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**
- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the

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Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2).[2] **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).[2] **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

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Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

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22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following: **(R 336.1213(3)(c))**
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that; "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete." The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.[2] **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**

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c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**
d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**

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d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(9))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

37. If the permittee is subject to 40 CFR Part 82 and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

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Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit to Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.[2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.[2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, EGLE.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.[2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

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SOURCE-WIDE CONDITIONS

DESCRIPTION

NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8-1

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VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall not operate unless the fugitive dust control plan for all outside bulk storage piles, transport of bulk materials, landfill, outdoor conveyor systems, plant roadways and lots, and manufacturing activities specified in the Fugitive Dust Control Program has been implemented and is maintained. **(R 336.1371, R 336.1372, and Act 452.5524)**

2. Each responsible official shall certify annually the compliance status of the stationary source with all stationary Source-Wide conditions. This certification shall be included as part of the annual certification of compliance as required in General Conditions in Part A of the ROP and Rule 213(4)(c). **(R 336.1213(4)(c))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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C. EMISSION UNIT SPECIAL CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU0101-1	Chip screening operations - Chips are screened to remove fines and overs (chips too large for pulping). Overs are conveyed to the chipper for reprocessing. Emissions are controlled by a baghouse.	11/01/1988 04/01/2008	NA
EU0102-1	Chip production operations – Roundwood is chipped in a rotary disc system and conveyed to screening operations or ship pile. Emissions are controlled by a baghouse.	06/01/1981	NA
EU0106-1	Air density separator – This process separates wood chips used in the process from reject material and conveys the chips to the storage pile or screening system.	11/01/1988	NA
EU0203-1	Chip bin – Chips that have been conveyed to the chip bin are metered, as needed, into the digester through a rotary feed system. Dilute vent gases from the chip bin are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981 08/02/1989 04/01/2008	FG2334-1 FGBBKRAFT-1
EU0204-1	Digester System – Chips and cooking additives are combined with steam in the digester to produce pulp. Concentrated vent gases from the digester system are routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981 04/01/2008 05/01/2012 10/31/2018	FG2334-1 FGBBKRAFT-1
EU0205-1	Digester Blow Tank – Pulp from the digester process is transferred to this tank prior to processing in the brown stock washing system. Dilute vent gases from the blow tank are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1

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Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU0368-1	Brown Stock Washers – Pulp from the digester system is transferred to the brown stock washers where the pulp is screened and cleaned using a water solution. Dilute vent gases from the Brown Stock Washers are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981 05/01/1990 04/01/2008	FG2335-1 FGBBKRAFT-1
EU0407-1	White Liquor Oxidation System – A caustic solution is combined with air, steam and spent liquor solution which converts the sodium sulfide to sodium thiosulfate. A demister controls emission from the White Liquor Oxidation System.	05/01/1990	FGPULPINGMOD-1~~NA~~
EU0460-1	O_2 Delignification System - Washed brown stock pulp is treated with oxygen and various chemicals to further cook the pulp. Dilute vent gases from the O2 delignification system are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	05/01/1990 05/01/1996 04/01/2008	FG2335-1
EU0508-1	Bleach Plant Process - Washed brown pulp is treated with various chemicals for brightening. Bleached and washed pulp from the EU0508-1 Bleaching Process is stored in hardwood pulp storage chests prior to being used on the paper machine or converted to dried pulp. Emissions are controlled by the D stage scrubbers.	06/01/1981 08/01/1994 04/01/2008	FGBLEACH-1 FGPULPINGMOD-1
EU0513-1	Bleach Plant Process Extraction Tower - Washed pulp is treated with various chemicals for brightening. Emissions are controlled by a scrubber.	06/01/1981 08/01/1994 04/01/2008	FGBLEACH-1 FGPULPINGMOD-1
EU0514-1	Bleach Plant Process Extraction Washer and Filtrate Storage - Washed pulp is treated with various chemicals for brightening. Emissions are controlled by a scrubber.	06/01/1981 08/01/1994 04/01/2008	FGBLEACH-1 FGPULPINGMOD-1
EU0610-1	Chlorine Dioxide (ClO_2)Generating Plant – Process unit and associated equipment used to make chlorine dioxide (ClO_2). Emissions are controlled by scrubbers.	06/01/1981 04/01/1994 04/01/2008	FGPULPINGMOD-1~~NA~~
EU0611-1	Methanol Storage Tank – The overflow capacity of the tank is 28,000 gallons	04/01/1994	~~NA~~FGPULPINGMOD-1
EU0765-1	Evaporator System – Liquor from the digester and pulp washer systems is processed in the evaporator system to increase solids content of the liquor. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981 04/01/2008	FG2334-1 FGBBKRAFT-1

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Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU0766-1	Hotwell – This unit is part of the evaporator system. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1
EU0767-1	Condensate Stripper – Condensate from the evaporator system is steam-stripped to remove organics. CVG Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1
EU0815-1	Chemical Recovery Furnace capable of burning black liquor solids, salt cake and ESP hopper solids. Also capable of firing natural gas and incinerating vent gases (containing TRS compounds) from the pulping processes. Emissions are controlled by an ESP.	06/01/1981 05/30/1995 04/01/2008 05/01/2012 10/31/2018	FGPULPINGMOD-1~~NA~~
EU0816-1	Smelt Dissolving Tank – Inorganics from the Chemical Recovery Furnace and precipitator are mixed with weak wash to form green liquor. Emissions are controlled by a wet scrubber.	06/01/1981 04/01/2008 05/01/2012	FGPULPINGMOD-1~~NA~~
EU0917-1	Lime Kiln – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.	06/01/1981	FGPULPINGMOD-1~~NA~~
EU1019-1	Slaker – Green liquor from the recausticizing system and lime from the kiln or purchased lime are mixed in the slaker to produce white liquor. Emissions are controlled by a wet scrubber.	06/01/1981	FGPULPINGMOD-1~~NA~~
EU1121-1	Waste Fuel Boiler – Combination boiler capable of burning wood ~~refuse~~residuals, coal and natural gas to produce steam used in the mill. Emissions are controlled by a multicyclone collector, ESP and OFA system.	06/01/1981 10/22/2010	~~FGWFBMOD-1~~FGPULPINGMOD-1
EU1122-1	Package Boiler – Natural gas fired boiler that supplies steam to mill processes.	06/01/1988	NA
EU1125-1	Coal Crusher/Unloader & Handling – Emissions are controlled by a baghouse.	06/01/1981	FGSOLIDFUEL-1
EU1127-1	Fuel Hogging Operations – Bark and wood waste from the pulping operations are processed and transferred to the woodyard and wood ~~refuse~~ residuals boiler. Emissions are controlled by a baghouse.	06/01/1981 06/01/1988	FGSOLIDFUEL-1

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Commented [PL3]: This flexible group is associated with recordkeeping for PTI100-10, which was complete in 2021.

Commented [PL2]: Per 9/20/24 pre-application discussion with Michael Conklin, propose to change "refuse" to "residuals" in all referenced areas of ROP because the word refuse connotes a waste or discarded material, which is not appropriate for the wood based fuel burned in this boiler.

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Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU1128-1	Purchased Fuel Hogging Operations - Delivery system, for purchased hog fuel (wood ~~refuse~~residuals), which is screened and transferred to the hog fuel storage pile, then to the waste fuel boiler (EU1121-1). The new delivery system will have three (3) open air drop points that include the truck dumper, screen operation bypass, and transfer building bypass. Emissions are controlled by a baghouse.	10/20/2010	~~FGWFBMOD-1~~
EUCOOLTWR-1	Cooling Tower - Mechanical induced draft cooling tower with high efficiency drift eliminators to be used for the existing steam turbine and the new 29 MW steam turbine at the Mill.	10/20/2010	~~FGWFBMOD-1~~
EU1137-1	Hogged Fuel / Coal Transfer – Emissions are controlled by a baghouse.	06/01/1981 06/01/1988	FGSOLIDFUEL-1
EU1227-1	Q41 Paper Machine – Pulp (from hardwood pulp, softwood pulp, coated broke, and uncoated broke storage) is combined with supplemental chemicals and additives to make various grades of paper.	06/01/1988	~~NA~~FGPULPINGMOD-1
EU1228-1	Finished Paper Trimming – Paper rolls on the calendars and rereelers are trimmed to meet customer specifications. Emissions are controlled by cyclones and baghouses.	06/01/1988	NA
EU1229-1	Q41 Starch Handling – Ethylated starch is unloaded, stored and transferred for use on the paper machine. Emissions are controlled by a baghouse.	06/01/1988	FGQ41STARCH-1
EU1239-1	Q41 Starch Handling – Ethylated starch is unloaded, stored and transferred for use on the paper machine. Emissions are controlled by a baghouse.	06/01/1988	FGQ41STARCH-1
EU1240-1	Q41 Starch Handling – Ethylated starch is unloaded, stored and transferred for use on the paper machine. Emissions are controlled by a baghouse.	06/01/1988	FGQ41STARCH-1
EU1882-1	Pulp Dryer – Pulp produced onsite is dewatered, pressed, dried and cut into bales for transport and sale.	06/01/1981	FGPULPINGMOD-1
EU2336-1	Condensate Source Group – Emissions are controlled by a condensate stripper, the CVG and DVG systems, and recycled in the pulp washing system.	06/01/1981 05/01/1996	NA
EU22CI001-1	Fire Water Pump – Emergency CI RICE MACT unit for fire water distribution.	2001	FGCIRICEMACT-1
EU09SI001-1	Lime Mud Storage Tank Auxiliary Gas Engine – SI RICE MACT unit for Lime Mud Storage Tank mixing.	2002	FGSIRICEMACT-1

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Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU23SI001-1	Admin Computer Room Backup Generator – SI RICE MACT unit for Admin building backup computer power.	2004	FGSIRICEMACT-1
EU12SSI001-1	41 Computer Room Backup Generator – Emergency SI ICE used for 41 Area backup computer power.	2011	FGNSPSSSIICE-1
EU09SI002-1	Lime Kiln Auxiliary Gas Engine – SI RICE MACT unit used for turning the Lime Kiln during periods when the main drive is not used.	1996	FGSIRICEMACT-1

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EU0101-1 CHIP SCREENING OPERATIONS
EMISSION UNIT CONDITIONS

DESCRIPTION

CHIP SCREENING OPERATIONS: Chips are screened to remove fines and overs (chips too large for pulping). Overs are conveyed to the chipper for re-processing.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate matter (PM)	0.03 gr/dscf of exhaust gasses calculated on a dry gas basis[2]	Hourly	EU0101-1	SC VI.1 - 3	**40 CFR 52.21(j)(3)**
2. PM	5.2 pph[2]	Hourly	EU0101-1	SC VI.1 - 3	**40 CFR 52.21(j)(3) R 336.1301(1)(c)**
3. Visible emissions	0%	6-minute average	EU0101-1	SC VI.2	**R 336.1301(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU0101-1 unless the bag filter control equipment is operating properly.[2] **(R 336.1301(1)(c), R 336.1331(c), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0101-1 process unless a gauge which measures the pressure drop across the fabric filter collector is operating properly. **(40 CFR 64.4(e))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING:

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall record and maintain on file monthly processing rates (throughput) and shall make the records available to the AQD upon request. **(R 336.1910)**

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2. The permittee shall record weekly non-certified visual opacity observation as an indicator of proper operation of the dust collector. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i and ii))**

3. The permittee shall continuously measure the pressure drop and record once per shift as an indicator of proper operation of the dust collector. The indicator range is 0.1 to 4.0 inches water column. The averaging period is daily. The monitor shall be calibrated annually. **(40 CFR 64.6(c)(1)(i, ii, and iii))**

4. An excursion is the presence of any visible emissions and/or a departure from the differential pressure gauge indicator range of 0.1 to 4.0 inches water column. **(40 CFR 64.6(c)(2))**

5. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. An excursion response triggers an inspection, corrective action, and a reporting requirement. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

6. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

7. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

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5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV01-ST-042-001	32[2]	55[2]	**R 336.2083** **R 336.2804** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0102-1 CHIP PRODUCTION OPERATIONS EMISSION UNIT CONDITIONS

DESCRIPTION

CHIP PRODUCTION OPERATIONS – Roundwood is chipped in a rotary disc system and conveyed to screening operations or chip pile.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.06 lb. / 1,000 lbs. of exhaust gases, calculated on a dry gas basis[2]	Hourly	EU0102-1	SC VI.1 – 3	**R 336.1331(1)(c)**
2. Visible emissions	5 percent opacity[2]	6-Minute Average	EU0102-1	SC VI.2	**R 336.1301(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU0102-1 unless the dust collectors are operating properly.[2] **(R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0102-1 unless a gauge which measures the pressure drop across the fabric filter collector is operating properly.[2] **(R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall record and maintain on file monthly processing rates (throughput) and shall make the records available to the AQD upon request. **(R 336.1910)**

2. The permittee shall perform and record weekly non-certified visual opacity observation as an indicator of proper operation of the dust collector. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i and ii))**

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3. The permittee shall continuously measure the pressure drop and record once per day as an indicator of proper operation of the dust collector. The indicator range is 0.5 to 10.0 inches water column. The averaging period is daily. The monitor shall be calibrated annually. **(40 CFR 64.6(c)(1)(i, ii, and iii))**

4. An excursion is visible emissions greater than 5% opacity and/or a departure from the differential pressure gauge indicator range of 0.5 to 10.0 inches water column. **(40 CFR 64.6(c)(2))**

5. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. An excursion response triggers an inspection, corrective action, and a reporting requirement. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

6. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

7. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

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See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV01-ST-036-001	16[2]	14[2]	**R 336.2803** **R 336.2804** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0106-1 AIR DENSITY SEPARATOR EMISSION UNIT CONDITIONS

DESCRIPTION

AIR DENSITY SEPARATOR – This process separates wood chips used in the process from reject materials and conveys the chips to the storage pile or screening system.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Cyclone

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.03 gr/dscf of exhaust gases[2]	Hourly	EU0106-1	SC VI.1	**R 336.1331(1)(c)**
2. PM	4 pph[2]	Hourly	EU0106-1	SC VI.1	**R 336.1331(1)(c)**
3. Visible Emissions	0%	6-minute average	EU0106-1	SC VI.1	**R 336.1301(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU0106-1 unless the cyclone is operating properly.[2] **(R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record weekly non-certified visible opacity observations as an indicator of proper operation of the cyclone. The permittee shall make the records available to the AQD upon request.[2] **(R 336.1301(1)(c))**

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VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV01-ST-061-001	28[2]	98[2]	**R 336.2803** **R 336.2804** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0407-1 WHITE LIQUOR OXIDATION SYSTEM EMISSION UNIT CONDITIONS

DESCRIPTION

WHITE LIQUOR OXIDATION SYSTEM - A caustic solution is combined with air, steam and spent liquor solution which converts the sodium sulfide to sodium thiosulfate. The oxidized white liquor is used to further treat wood pulp in the pulping process

Flexible Group ID: FGPULPINGMOD-1~~NA~~

POLLUTION CONTROL EQUIPMENT

Demister

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.08 gr/dscf[2]	Hourly	EU0407-1	SC VI.1	**R 336.1331(1)(c)**
2. PM	0.30 pph[2]	Hourly	EU0407-1	SC VI.1	**R 336.1331(1)(c)**
3. Visible Emissions	5% opacity[2]	6-Minute Average	EU0407-1	SC VI.1	**R 336.1301(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU0407-1 unless the demister is operating properly.[2] **(R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record weekly non-certified visible opacity observations as an indicator of proper operation of the demister. The permittee shall make the records available to the AQD upon request.[2] **(R 336.1301(1)(c))**

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VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV04-ST-003-001	12[2]	100[2]	**R 336.2803** **R 336.2804** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0610-1 ClO_2 GENERATING PLANT EMISSION UNIT CONDITIONS

DESCRIPTION

ClO_2 GENERATING PLANT – Process unit and associated equipment used to make chlorine dioxide (ClO_2). Three chlorine dioxide storage tanks, with chilled water scrubbers, chlorine dioxide adsorption tower, salt cake slurry tank, generator dump tank, barometric condenser, salt cake filter, seal tank, sample chamber sewer, hereinafter "chlorine dioxide generator".

Flexible Group ID: FGPULPINGMOD-1~~NA~~

POLLUTION CONTROL EQUIPMENT

Scrubbers

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Chlorine	0.067 pph[1]	3-hour average	EU0610-1	SC VI.1	**R 336.1224(1)**
2. Chlorine	13.5 mg/m^3, corrected to 70°F and 29.92 in Hg[1]	3-hour average	EU0610-1	SC VI.1	**R 336.1224(1)**
3. Chlorine Dioxide	0.035 pph[1]	3-hour average	EU0610-1	SC VI.1	**R 336.1224(1)**
4. Chlorine Dioxide	7.0 mg/m^3, corrected to 70°F and 29.92 in Hg[1]	3-hour average	EU0610-1	SC VI.1	**R 336.1224(1)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU0610-1 unless the white liquor scrubber is operating properly.[2] **(R 336.1224(1), R 336.1225, R 336.1910)**

2. The permittee shall not operate the three chlorine dioxide storage tanks unless the chilled water scrubbers and white liquor scrubber are operating properly.[2] **(R 336.1224(1), R 336.1225, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING:

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the flow of the scrubber liquid to the white liquor scrubber on a continuous basis in a manner and with instrumentation acceptable to the AQD.[2] **(R 336.1224(1), R 336.1225, R 336.1910**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV06-ST-009-001	10[2]	125[2]	**R 336.1225** **R 336.2803** **R 336.2804** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. There shall be no visible emissions from the chlorine dioxide generator.[2] **(R 336.1301(1)(c))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0611-1 METHANOL STORAGE TANK
EMISSION UNIT CONDITIONS

DESCRIPTION

Methanol Storage Tank – The overflow capacity of the tank is 28,000 gallons. ~~METHANOL STORAGE TANK~~

Flexible Group ID: ~~NA~~FGPULPINGMOD-1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~1. Methanol~~	~~25.0 pph[1]~~	~~Hourly~~	~~EU0611-1~~	~~SC VI.1~~	~~R 336.1224(1)~~ ~~R 336.1225~~
1. Methanol	0.54 tpy[1]	12-month rolling time period as determined at the end of each calendar month	EU0611-1	SC VI.1, SC VI.2	**R 336.1224(1)**

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II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methanol	650,000 gallons per year transferred~~600,000 gallons[2]~~	12-month rolling time period as determined at the end of each calendar month	EU0611-1	SC VI.1	**R 336.12~~01(3)~~05(1)(a) & (b), R 336.1224(1), R 336.1225**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not fill EU0611-1 at a rate faster than 200 gallons per minute.[1] **(R 336.1224(1), R 336.1225)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

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1. The permittee shall monitor and record, in a satisfactory manner acceptable to the AQD District ~~the~~Supervisor, the amount of methanol transferred into EU0611-1 on a monthly and 12-month rolling time period. The permittee shall keep all records on file and make them available to the Department upon request.[1] **(R 336.1205(1)(a) & (b), R 336.1224(1), R 336.1225)**

2. The permittee shall calculate and record the amount of methanol emissions from EU0611-1 on a monthly and 12-month rolling time period basis. The permittee shall keep all records on file and make them available to the Department upon request.[1] **(R 336.1205(1)(a) & (b), R 336.1224(1), R 336.1225)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

Tank pressure may be released by a pressure/vacuum breaker safety valve, as needed. Pressure relief valve discharges through a goose-neck vent.

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV06-ST-007-002	4	22	R 336.1225, R 336.2803, R 336.2804~~NA~~

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0815-1 CHEMICAL RECOVERY FURNACE EMISSION UNIT CONDITIONS

DESCRIPTION

CHEMICAL RECOVERY FURNACE capable of burning black liquor solids, salt cake and ESP hopper solids. The Recovery Furnace is also capable of firing natural gas and vent gases (containing TRS compounds) from pulping process.

Flexible Group ID: ~~NA~~FGPULPINGMOD-1

POLLUTION CONTROL EQUIPMENT

Electrostatic Precipitator (ESP) to control particulate emissions

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~1. Hydrogen Chloride (HCl)~~	~~3.4 mg/dscm, corrected to 8% oxygen[1]~~	~~3-hour average~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) R 336.1225~~
~~2. HCl~~	~~2.8 pph[1]~~	~~3-hour average~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) R 336.1225~~
~~3. Sulfuric Acid (H_2SO_4)~~	~~2.5 mg/dscm, corrected to 8% oxygen[2]~~	~~3-hour average~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) R 336.1225 40 CFR 52.21(j)(3)~~
~~4. H_2SO_4~~	~~2.07 pph[2]~~	~~3-hour average~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) 40 CFR 52.21(j)(3)~~
~~5.~~1. H_2SO_4	9.06 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	**R 336.1205~~(3)~~(1)(a) & (b)**
~~6. Total Reduced Sulfur (TRS) based on H_2S~~	~~4.3 ppmv on a dry basis, at 8% oxygen[2]~~	~~24-hour daily~~	~~EU0815-1~~	~~SC VI.2 SC VI.4~~	~~R 336.1224(1) R 336.1225 40 CFR 52.21(j)(3)~~
~~7. TRS based on H_2S~~	~~5.0 pph[2]~~	~~24-hour daily~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) R 336.1225 40 CFR 52.21(j)(3)~~
~~8. TRS based on H_2S~~	~~10.0 ppmv on a dry basis, at 8% oxygen[2]~~	~~2-hour~~	~~EU0815-1~~	~~SC VI.2 SC VI.4~~	~~R 336.1224(1) R 336.1225 40 CFR 52.21(j)(3)~~
~~9. TRS based on H_2S~~	~~11.6 pph[2]~~	~~2-hour~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1) R 336.1225 40 CFR 52.21(j)(3)~~
~~10.~~2. TRS based on H_2S	5.0 ppmv on a dry basis, at 8% oxygen[2]	12-hour block average	EU0815-1	SC VI.2 SC VI.3 SC VI.4	**R 336.1224(1) R 336.1225 40 CFR 60.283(a)(2) 40 CFR 52.21(j)(3)**

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Section 1 – Billerud Quinnesec, LLC

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~11. TRS based on H_2S~~	~~5.8 pph[2]~~	~~12-hour~~	~~EU0815-1~~	~~SC V.1~~ ~~SC VI.4.b~~	~~R 336.1224(1)~~ ~~R 336.1225~~ ~~40 CFR 52.21(j)(3)~~
3. TRS based on H_2S	~~10.25~~12.15 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	**R 336.1205**(1)(a) & (b)~~(3)~~
4. H_2S	10.~~25~~ 7 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	**R 336.1205**(1)(a) & (b)~~(3)~~
~~12. TCDD Toxic Equivalent (2,3,7,8-tetra-chlorodibenzo-p-dioxin) (a)~~	~~1.0 nanogram per dscm of exhaust gases, at 8% oxygen[2]~~	~~Hourly~~	~~EU0815-1~~	~~SC V.1~~	~~R 336.1224(1)~~ ~~R 336.1225~~ ~~R 336.2003(1)(c)~~
5. PM2.5	42.1 pph	Hourly	EU0815-1	SC V.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
~~5.~~6. PM-2.5	~~108.72 tpy[2]~~184.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	**R 336.1205**~~(3)~~(1)(a) & (b) ~~R 336.2803~~ ~~R 336.2804~~ ~~40 CFR 52.21 (c) & (d)~~R 336.2810
~~13. PM-10~~	~~0.027 gr/dscf of exhaust gases, on a dry basis, corrected to 8% oxygen[2]~~	~~Hourly~~	~~EU0815-1~~	~~SC VI.1.a~~	~~40 CFR 52.21(j)(3)~~
~~6.~~7. PM-10	~~51.1 pph[2]~~45.7 pph	Hourly	EU0815-1	SC V.1~~SC VI.1.a~~	R 336.1205(1)(a) & (b) **R 336.2803** **R 336.2804** R 336.2810~~40 CFR 52.21(c) & (d)~~ ~~40 CFR 52.21(j)(3)~~
~~7.~~8. PM-10	~~122.24 tpy[2]~~200.2 typ	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b) R 336.2810~~R 336.1205(3)~~ ~~R 336.2803~~ ~~R 336.2804~~ ~~40 CFR 52.21 (c) & (d)~~
~~8.~~9. PM	0.044 gr/dscf at 8% oxygen[2]	Hourly	EU0815-1	~~SC VI.1.c~~ ~~SC VI.1.d~~ ~~SC VI.1.e~~ SC V.2 SC VI.1	**40 CFR 63.862(a)(1)(i)**

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Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
10. PM	48.6 pph	Hourly	EU0815-1	SC V.1, SC VI.1	R 336.1205(1)(a) & (b), R 336.1331, R 336.2810
~~9.~~11. PM	~~129.43 tpy[2]~~212.9 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b) R 336.2810~~R 336.1205(3)~~
~~10.~~12. Sulfur Dioxide (SO_2)	50 ppmv on a dry basis, at 8% oxygen[2]	24-hour ~~daily~~average	EU0815-1	SC VI.4	**40 CFR 52.21(j)(3)**
~~11.~~13. SO_2	110 pph[2]	24-hour ~~daily~~average	EU0815-1	SC VI.6~~SC V.1 SC VI.4.b~~	R 336.1205(1)(a) & (b) **R 336.2803 R 336.2804 40 CFR 52.21(c) & (d) 40 CFR 52.21(j)(3)**
~~12.~~14. SO_2	25 tpy~~19.06 tpy[2]~~	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b) ~~R 336.1205(3)~~ **R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~13.~~15. ~~Nitrogen Oxides (NO_x)~~	~~120~~ 110 ppmv on a dry basis, at 8% oxygen[2]	24-hour rolling average~~daily~~	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2810~~40 CFR 52.21(j)(3)~~
~~14.~~16. NO_x	218 pph~~188 pph[2]~~	24-hour rolling average~~daily~~	EU0815-1	SC VI.6~~SC V.1 SC VI.4.b~~	R 336.1205(1)(a) & (b) **R 336.2803 R 336.2804** R 336.2810~~40 CFR 52.21(c) & (d) 40 CFR 52.21(j)(3)~~
~~15.~~17. NO_x	890 tpy~~709.23 tpy[2]~~	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810~~R 336.1205(3) R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)~~
~~16.~~18. ~~Carbon Monoxide (CO)[b]~~CO	380 ppmv on a dry basis at 8% oxygen~~400 ppmv on a dry basis at 8% oxygen[2]~~	8-hour rolling average~~8-hour average~~	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810~~R 336.2804 40 CFR 52.21(d) 40 CFR 52.21(j)(3)~~
~~17.~~19. CO[b]	458 pph~~384 pph[2]~~	8-hour rolling average~~8-hour average~~	EU0815-1	SC VI.6~~SC V.1~~	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810~~R 336.2804 40 CFR 52.21(d) 40 CFR 52.21(j)(3)~~

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Section 1 – Billerud Quinnesec, LLC

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~18.~~20. CO[b]	425 ppmv on a dry basis, at 8% oxygen~~500 ppmv on a dry basis, at 8% oxygen[2]~~	3-hour rolling average~~1-hour average~~	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810~~40 CFR 52.21(j)(3)~~
~~19.~~21. CO[b]	512.2 pph~~480 pph[2]~~	3-hour rolling average~~1-hour average~~	EU0815-1	SC VI.6~~SC V.1 SC VI.4.b~~	R 336.1205(1)(a) & (b) R 336.2804, R 336.2810~~R 336.2804 40 CFR 52.21(d) 40 CFR 52.21(j)(3)~~
~~20.~~22. CO	900 tpy~~592.31 tpy[2]~~	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810~~R 336.1205(3) R 336.2804 40 CFR 52.21(d)~~
~~21.~~23. VOC	43.96 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a), R 336.1702(c)~~R 336.1205(3)~~
~~22.~~24. Lead	0.54 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	**R 336.1205~~(3)~~(1)(a) R 336.2804 40 CFR 52.21(d)**
~~23.~~25. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	50 ppmv on a dry basis, at 8% oxygen[2]	~~3-hour average~~Hourly	EU0815-1	SC V.1	**R 336.1702(~~a~~c) 40 CFR 52.21(j)(3)**
~~24.~~26. TGNMO measured as total methane	27.4 pph[2]	~~3-hour average~~Hourly	EU0815-1	SC V.1	**R 336.1702(~~a~~c) 40 CFR 52.21(j)(3)**
27. GHG as CO2e	210 lbs/MMBTU	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j)
28. GHG as CO2e	972,722 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j)

~~a. The total polychlorinated dibenzo-p-dioxins and dibenzofurans emissions as 2,3,7,8-TCDD toxic equivalents are to be calculated using the USEPA Toxic Equivalent Factors (TEFs) in TEFs/89. These limits do not apply during startup and shutdown.~~

II. MATERIAL LIMIT(S)

1. The permittee shall not fire any fuels in EU0815-1 except for natural gas, virgin black liquor solids, salt cake or ESP hopper materials. **(R 336.1224, R 336.1225, R 336.1702(~~a~~c))**

2. The natural gas fuel usage for EU0815-1 shall not exceed 793.55 million cubic feet per year based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b)~~(3)~~, R 336.1224, R 336.1225, R 336.1702(~~a~~c))**

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3. The permittee shall not fire virgin black liquor solids, salt cake or ESP hopper materials greater than 4.~~44~~ 68 million pounds per operating day and ~~755,000~~823,440 tons per year, based on a 12-month rolling time period.[2] **(R 336.1205(1)(a) & (b)~~(3)~~, R 336.1224, R 336.1225, R 336.1702(~~a~~c))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

~~1. During startup or shut down of EU0815-1, the CO emissions shall not exceed 1000 ppmv on a dry basis, corrected to 8% O_2, based upon a 12-hour average. Compliance with the CO emission limit during the periods of startup and shutdown shall be determined using CEMS for CO. **(R 336.2804, 40 CFR 52.21(d), 40 CFR 52.21(j)(3))**~~

1. The steam load from EU0815-1 while incinerating dilute vent gases (DVG)~~s~~ shall not be less than 100,000 pounds of steam per hour, unless otherwise demonstrated by the permittee to the satisfaction of the AQD. **(~~R 336.1224, R 336.1225, R 336.19011910~~)**

2. The permittee shall not generate DVGs during startup unless the DVGs can be accepted to either EU0815-1 or EU1121-1, which has maintained a minimum steam load under stable conditions. **(R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1702(c))**

3. The permittee shall not operate EU0815-1 unless the smelt dissolving tank scrubber and mist eliminator are operating properly. Proper operation includes, but is not limited to, compliance with established operating parameters. **(R 336.1225, R 336.1301, R 336.1331(1)(c), R 336.1702(c), R 336.1910, 40 CFR Part 63 Subparts A and MM).** ~~.[2] (R 336.1224, R 336.1225, R 336.1301, R 336.1331(1)(c), R 336.1702(a), R 336.1901, R 336.1910)~~

4. The permittee shall not operate EU0815-1 on virgin black liquor solids, salt cake, and/or ESP hopper materials, including during startup and shutdown, unless the ESP is operating properly. **(R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

5. The period of startup or shutdown is defined as the period when the permittee commences the process of continuously burning black liquor solids in EU0815-1 or begins the process of discontinuing the continuous burning of black liquor solids, respectively, and does not include any period when the permittee is combusting only natural gas in EU0815-1. The periods of startup or shutdown shall not exceed 12 hours per occurrence. **(R 336.1205, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

~~3.~~6. The permittee shall operate and maintain EU0815-1, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, and malfunction. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c), R 336.2803, R 336.2804, R 336.2810)**

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IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0815-1 unless the ESP is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

~~NA~~

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify PM, PM10, PM2.5, and TGNMO emission rates by testing at owner's expense, in accordance with Department requirements. Performance stack testing shall be once every five years from the last test. ~~The permittee shall conduct performance testing for SO2, NOx, CO, HCl, Sulfuric Acid, TRS, TCDD, and TGNMO for EU0815-1 by testing at owner's expense, in accordance with Department requirements, once every ROP renewal period.~~ Testing shall be performed using an approved USEPA Method listed in:

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Pollutant	Test Method Reference
~~CO~~PM	40 CFR Part 60, Appendix A ; Part 10 of the Michigan Air Pollution Control Rules
~~NOx~~PM10	40 CFR Part ~~60~~51, Appendix M~~A~~
~~SO2~~PM2.5	40 CFR Part ~~60~~51, Appendix M~~A~~
~~Hydrogen Chloride~~	~~40 CFR Part 60, Appendix A~~
~~Sulfuric Acid~~	~~40 CFR Part 60, Appendix A~~
~~Total Reduced Sulfurs (TRS)~~	~~40 CFR Part 60, Appendix A~~
~~TCDD~~	~~40 CFR Part 60, Appendix A~~
Total Gaseous Nonmethane Organics (TGNMO)	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.2001, R 336.2003, R 336.2004)** ~~**(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60, 40 CFR 52.21, 40 CFR 64.4(e), 40 CFR 64.6(d))**~~

2. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. ~~The first periodic performance test must be conducted by October 13, 2020.~~ Subsequent periodic tests must be conducted within 5 years following the previous performance test. Notification of performance tests shall be submitted at least 60 days in advance to the Administrator along with a site-specific test plan if requested. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through EPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Continuous Opacity Monitoring
   a. The permittee shall utilize COM-recorded opacity as an indicator of the proper operation of the ESP. The indicator range of opacity defining proper function of the ESP is 20%. Six-minute average values shall be based on 36 or more equally spaced instantaneous opacity measurements per six-minute period. An excursion is a departure from the indicator range of 20% opacity. Opacity shall be determined at the exit of the main stack using a combiner equation acceptable to the AQD. **(40 CFR 64.6(c)(1)(i and ii), 40 CFR 64.6(c)(2), R 336.1301, R 336.2810))**

   ~~b. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of EU0815-1 (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**~~

   ~~c.~~b. The permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system to measure opacity in accordance with the procedures in 40 CFR 63.6(h) and 40 CFR 63.8. Opacity shall be determined at the exhaust of the recovery furnace to the main stack. **(40 CFR 63.6(h), 40 CFR 63.8)**

   ~~d.~~c. The permittee shall maintain opacity at or below 35% except for 2% of the time in any quarter and periods of SSM. **(40 CFR Part 63, Subpart MM)**

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d. The permittee shall implement corrective action when the average of ten consecutive 6-minute averages result in a measurement greater than 20% opacity. **(40 CFR 63.864(k)(2)(i))**

e. The permittee shall record opacity emissions on a continuous basis, with certified instrumentation meeting the requirements of 40 CFR 60 Appendix B Performance Specification 1 and the applicable standards. The permittee shall perform quality assurance procedures according to 40 CFR 60 Appendix F, Procedure 3. Alternate procedures may be approved by the AQD. The permittee shall maintain and submit at the request of the AQD a Quality Assurance Plan for the continuous opacity monitoring system. The results of all quality assurance procedures shall be reported to the AQD in a format of the data assessment report (DAR) along with the quarterly excess emission reports (EER) and summary reports. **(40 CFR Part 63 Subparts A and MM, 40 CFR Part 60, Subparts A & BB, and Appendix B and Appendix F to Part 60)**

~~f. The permittee shall conduct inspections, evaluations, and quality control for the COM. (R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 52.21(j)(3))~~

~~g.~~f. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c), R 336.1910)**

~~h.~~g. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b), R 336.1910)**

~~i.~~h. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1), R 336.1910)**

2. Continuous Emission Monitoring (CEM) System and Recordkeeping.
   a. The permittee shall calibrate, monitor and record gaseous emissions of TRS on a continuous basis, with certified instrumentation, and in a manner acceptable to 40 CFR Part 60, Appendix B, Performance Specification Nos. 1 & 5. **(40 CFR 60.13, 40 CFR 60 Appendix B, Performance Specifications Nos. 1 & 5, 40 CFR 60.284)**
   b. The permittee shall perform and report Quality Assurance Procedures of the CEMS and submit it to the AQD in a format of the data assessment report (DAR) along with the quarterly excess emission reports (EER) and summary reports. **(40 CFR Part 60, Subparts A & BB, and Appendix F)**

3. Process Monitoring System and Recordkeeping.
   a. The permittee shall comply with the monitoring system and recordkeeping as required by 40 CFR 60.284. **(40 CFR 60.284)**

4. Other Monitoring and/or Recordkeeping.
   a. The permittee shall maintain records of Particulate Matter and TRS emissions. **(40 CFR Part 60, Subpart A; 40 CFR 60.284)**
   b. Compliance with the concentration limits (ppmv) of SO_2, NOx, CO, and TRS shall be determined using CEMS located downstream of the ESP and in accordance with the procedures described in 40 CFR Part 60, Subpart BB, Section 60.284 and 40 CFR Part 60, Appendix B and the applicable Performance Specifications (PS) 2 through 5. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21, 40 CFR 60.284, 40 CFR 60.285)**
   c. The permittee shall monitor and record, in a satisfactory manner, the amount of fuel combusted daily and monthly from EU0815-1 and calculate the annual capacity factor for natural gas as determined on a 12-month

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rolling average basis with a new annual capacity factor calculated at the end of each calendar month. **(R 336.1205 (1)(a) & (b), 40 CFR 60.49b(d)(1)(3), 40 CFR 60.49b(d)(o))**

d. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, a device to monitor and record black liquor solid (BLS) usage rate from EU0815-1, on a daily basis. **(R 336.1205(1)(a) & (b), R 336.2810)**

The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(3))

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period emission calculation records for EU0815-1, for H_2SO_4, TRS, H_2S, PM-2.5, PM-10, PM, SO_2, NO_x, CO, VOC and, lead, and CO_2e emission calculation records for EU0815-1, as required by SC I.1, I.3, I.4, I.6, I.8, I.11, I.14, I.17, I.22, I.23, I.24, I.27, and I.28SC I.5, I.12, I.13, I.15, I.18, I.20, I.23, I.26, I.31, I.32 and I.33. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810)**

5.6. The permittee shall calculate and keep pound per hour (pph) emission rates of SO2, NOx, and CO for EU0815-1, once every five years from the date of the last performance test. The permittee shall use the flow rate from the most recent stack test for particulate or TGNMO; and the concentration (in ppm) of each pollutant, measured from a certified CEMs, for the applicable averaging periods to calculate the pph emission rates. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810) (R 336.1205(3))**

7. The permittee shall maintain a record of all fuels including natural gas, virgin black liquor solids, salt cake and ESP hopper materials fired in EU0815-1 on a monthly and 12-month rolling time period basis. The record shall be maintained on-site and made permitte shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205 (1)(a) & (b) (3), R 336.1224, R 336.1225, R 336.1702(ac))**

8. The permittee shall maintain records of the startup and shutdown periods for EU0815-1, including dates, starting time, and ending time of such periods. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

6.9. The permittee shall monitor and record the total hourly, daily and annual EU0815-1 feed rates of black liquor solids which includes the virgin black liquor solids, salt cake, and ESP hoppers materials; the hourly steam load and natural gas usage of EU0815-1; the voltage and amperage supplied to all the fields and chambers of EU0815-1's ESP; and the time periods of one chamber operation of the ESP on a continuous basis in a manner and with instrumentation acceptable to the AQD. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

7.10. The permittee shall keep records, as applicable, specified in 40 CFR 63.866(b)-(d) in addition to the applicable recordkeeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

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4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

6. The permittee shall submit any performance test reports, including RATA reports, to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

7. The permittee shall submit the notifications and reports as specified in the applicable sections of 40 CFR Part 63, Subpart MM and A. Semiannual excess emissions reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CRR 63.867, 40 CFR 63.9, 40 CFR 63.10)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV08-ST-004-001	168[1]	299[1]	**R 336.1225, R 336.2803 R 336.2804~~, 40 CFR 52.21(c)&(d)~~**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM: National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)~~The permittee shall not generate DVGs during startup unless the DVGs can be accepted to either EU0815-1 or EU1121-1, which has maintained a minimum steam load under stable conditions.[2] (R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1702(a), R 336.1901)~~**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB, New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)~~The permittee shall not operate EU0815-1 on virgin black liquor solids, salt cake, and/or ESP hopper materials, including during startup and shutdown, unless the ESP is operating properly.[2] (R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1901, R 336.1910, 40 CFR 52.21)~~**

3. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart Db: New Source Performance Standards for Industrial, Commercial, Institutional Steam Generating Units. **(40 CFR Part 60, Subpart Db)**~~The permittee shall maintain records of the startup and shutdown periods for EU0815-1, including dates, starting time and ending time of such periods and CO emission rates during such periods on file for a period of at least two years and made available to the AQD upon request.[2] (R 336.2804, 40 CFR 52.21(d), 40 CFR 52.21)~~

~~4. The period of startup or shutdown is defined as the period when the permittee commences the process of continuously burning black liquor solids in EU0815-1 or begins the process of discontinuing the continuous burning of black liquor solids, respectively, and does not include any period when the permittee is combusting only natural gas in EU0815-1. The periods of startup or shutdown shall not exceed 12 hours per occurrence.[2] (R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1901, 40 CFR 52.21)~~

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~~5. The permittee shall monitor and record the total hourly, daily and annual EU0815-1 feed rates of black liquor solids which includes the virgin black liquor solids, salt cake, and ESP hoppers materials; the hourly steam load and natural gas usage of EU0815-1; the voltage and amperage supplied to all the fields and chambers of EU0815-1's ESP; and the time periods of one chamber operation of the ESP on a continuous basis in a manner and with instrumentation acceptable to the AQD.[2] **(R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1901, 40 CFR 52.21)**~~

~~6.~~4. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

~~7.~~5. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0816-1 SMELT DISSOLVING TANK EMISSION UNIT CONDITIONS

DESCRIPTION

SMELT DISSOLVING TANK – Inorganics from the chemical recovery furnace and precipitator are mixed with weak wash to form green liquor. Emissions are controlled by a wet scrubber.

Flexible Group ID: ~~NA~~FGPULPINGMOD-1

POLLUTION CONTROL EQUIPMENT

Dynamic scrubber to control particulate, total reduced sulfur (TRS), hydrogen sulfide, and total gaseous nonmethane organics (TGNMO) emissions. ~~Scrubber~~

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~1. H_2S~~	~~0.83 pph[2]~~	~~3-hour average~~	~~EU0816-1~~	~~SC V.1~~	~~**40 CFR 52.21(j)(3)**~~
~~2.~~1. H_2S	3.63 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	**R 336.1205(1)(a) & (b)**~~**R 336.1205(3)**~~
~~3.~~2. TRS based on H2S~~TRS **~~	0.~~015~~ 0168 lb/ton BLS on a dry weight as fired basis[2]	Hourly	EU0816-1	SC V.1	**40 CFR 52.21(j)(3)** ~~**40 CFR 60.283(a)(4)**~~
~~4. TRS **~~	~~1.19 pph[2]~~	~~Hourly~~	~~EU0816-1~~	~~SC V.1~~	~~**40 CFR 52.21(j)(3)**~~
~~5.~~3. TRS based on H2S~~TRS~~	0.033 lb /ton BLS as H_2S[2]	3-hour average	EU0816-1	SC V.1	**40 CFR 60.283(a)(4)**
~~6.~~4. TRS	5.21 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	**R 336.1205 (1)(a) & (b)**~~**(3)**~~
~~7.~~5. PM **	0.107 lb/ton BLS on a dry weight as fired basis[2]	Hourly	EU0816-1	SC V.1 SC VI.3	**40 CFR 52.21(j)(3)**
~~8.~~6. PM **	8.5 pph[2]	Hourly	EU0816-1	SC V.1 SC VI.3	**40 CFR 52.21(j)(3)**
~~9.~~7. PM	0.2 lb/ton BLS (dry weight)[2]	Hourly~~3-hour average~~	EU0816-1	SC V.2	**40 CFR 63.862(a)(1)(i)(B)** **40 CFR 60.282(a)(2)**

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~10.~~8. PM	28.16 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b)~~R 336.1205(3)~~
~~11.~~9. PM-10 **	0.107 lb/ton BLS on a dry weight as fired basis[2]	Hourly	EU0816-1	SC V.1 SC VI.3	**40 CFR 52.21(j)(3)**
~~12.~~10. PM-10 **	8.5 pph[2]	Hourly	EU0816-1	SC V.1 SC VI.3	**R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d) 40 CFR 52.21(j)(3)**
~~13.~~11. PM-10	~~23.69~~26.31 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b) ~~R 336.1205(3)~~ **R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~14.~~12. PM-2.5	22.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b) ~~R 336.1205(3)~~ **R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~15.~~13. SO_2 **	0.016 lb/ton BLS on a dry weight as fired basis[2]	Hourly	EU0816-1	SC V.1 SC VI.2	**R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~16.~~14. SO_2 **	1.27 pph[2]	Hourly	EU0816-1	SC V.1 SC VI.2	**R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~17.~~15. SO_2	5.56 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b)~~R 336.1205(3)~~ **R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
~~18.~~16. VOC	14.61 tpy~~[2]~~	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b)~~R 336.1205(3)~~
~~19.~~17. CO	5.29 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b) ~~R 336.1205(3)~~ **R 336.2804 40 CFR 52.21(d)**
~~20.~~18. NO_x	11.29 tpy[2]	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.~~8~~7	R 336.1205(1)(a) & (b) ~~R 336.1205(3)~~ **R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~21.~~19. TGNMO measured as methane	200 ppmv of exhaust gases, on a dry basis[2]	Hourly~~3-hour average~~	EU0816-1	SC V.1	**R 336.1702(a) 40 CFR 52.21(j)(3)**
~~22.~~20. TGNMO measured as methane	6.5 pph[2]	Hourly~~3-hour average~~	EU0816-1	SC V.1	**R 336.1702(a) 40 CFR 52.21(j)(3)**
BLS = Black liquor solids **Limit is based on a maximum of 4.~~44~~ 68 MM lbs per day of virgin black liquor solids, salt cake and/or ESP hoppers materials.					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

~~Input feed to the EU0816-1 shall cease immediately, consistent with safe operating procedures, upon initiation of collector bypass. Input feed to the tank shall not restart until the collector is back online and functioning properly. The permittee shall monitor and record the time(s) when the collector bypass is opened and closed.[1] **(R 336.1901)**~~NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0816-1 unless the scrubber is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.2810, R 336.2803, R 336.2804)**

~~NA~~

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify H_2S, TRS, PM, PM-10, SO_2, and TGNMO emission rates from EU0816-1, by testing at owner's expense, in accordance with the Department requirements, once every five years from the last test.~~once every ROP renewal period.~~ Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM-10	40 CFR Part 51, Appendix M
SO_2	40 CFR Part 60, Appendix A
H_2S	40 CFR Part 60, Appendix A
Total Gaseous Nonmethane Organics (TGNMO)	40 CFR Part 60, Appendix A
Total Reduced Sulfurs (TRS)	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days

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following the last date of the test. The TRS emission testing shall be conducted when incinerating DVGs in the chemical recovery furnace. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.7, 40 CFR 60.8 and Appendix A)**

2. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. ~~The first periodic performance test must be conducted by October 13, 2020.~~ Subsequent periodic tests must be conducted within 5 years following the previous performance test. Notification of performance tests shall be submitted at least 60 days in advance to the Administrator along with a site-specific test plan if requested. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through USEPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. Beginning October 11, 2019, the notification of compliance status must be submitted to the USEPA via CEDRI.[2] **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to measure fan amperage and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in 40 CFR 63.8. **(40 CFR 63.864(e)(10), 40 CFR 60.13(~~A~~a), 40 CFR 63.8(b)(1))**

2. The permittee shall establish scrubber operating ranges for fan amperage and scrubbing liquid flow rate as specified in 40 CFR 63.864(j) and 40 CFR 63.865. The minimum scrubbing liquid flow rate is the rate established during the most recent performance test for particulate matter. **(40 CFR 63.864(j))**

3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semi-annual period. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iv) and 40 CFR 63.864(k)(3))**

4. An excursion is when any 3-hour average parameter value is outside the minimum scrubber liquid flow rate established during the most recent performance test for particulate matter as provided in 40 CFR 63.864(j). The permittee shall implement corrective action upon detection of an excursion. **(40 CFR 63.864(k)(1)(ii)), (40 CFR 64.6(c)(2))**

5. The permittee shall conduct CMS inspections, evaluations and quality control. **(40 CFR 63.864(f) and 40 CFR 63.8(d)-(e))**

6. The permittee shall maintain the records, as applicable, specified in 40 CFR 63.866(b)-(d) in addition to the applicable record-keeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period H_2S, TRS, PM, PM-10, PM-2.5, SO_2, VOC, CO and NO_x emission calculation records for EU0816-1, as required by SC I.1, I.4, I.8, I.11, I.12, I.15, I.16, I.17, and I.18~~I.2, I.6, I.10, I.13, I.14, I.17, I.18, I.19, and I.20~~. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R336.1205(1)(a) & (b))** ~~**(R 336.1205(3))**~~

8. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). See Appendix 3 for the corrective action plan. **(40 CFR 64.7(d))**

9. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c), R 336.1910, R 336.1912)**

10. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b), R 336.1910)**

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11. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1), R 336.1910, R 336.1912)**

~~11.~~12. The permittee shall monitor and record the time(s) when the collector bypass is opened and closed.[1] **(R 336.1901)**

VII. REPORTING

~~1. Quarterly EER, within 30 days following the end of each calendar quarter. (40 CFR 60.7(c) & (d))~~

~~2~~1. The permittee shall submit the notifications and reports as specified in the applicable sections of 40 CFR 63 Subparts MM and A. ~~Beginning October 11, 2019, s~~Semiannual excess emissions reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CFR 63.867, 40 CFR 63.9, 40 CFR 63.10)**

~~3.~~2. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

~~4.~~3. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

~~5.~~4. The permittee shall submit any performance test reports, including RATA reports, to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(~~R 336.1213(3)(c),~~ R 336.2001(5))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV08-ST-005-001	48[1]	186[1]	**R 336.1225** **R 336.2803** **R336.2804** **~~40 CFR 52.21(c) & (d)~~**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM: National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**

~~2.~~3. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB: New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

~~3.~~4. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or

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the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU0917-1 LIME KILN
EMISSION UNIT CONDITIONS

DESCRIPTION

LIME KILN – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.

Flexible Group ID: ~~NA~~FGPULPINGMOD-1

POLLUTION CONTROL EQUIPMENT

Venturi wet scrubber to control particulate, total reduced sulfur (TRS), hydrogen sulfide, methanol, and total gaseous nonmethane organics (TGNMO) emissions.
~~Wet scrubber~~

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~1. Methanol~~	~~8.0 mg/dscm[1]~~	~~3-hour average~~	~~EU0917-1~~	~~SC V.1~~	~~R 336.1224 R 336.1225~~
~~2. Methanol~~	~~0.89 pph[1]~~	~~3-hour average~~	~~EU0917-1~~	~~SC V.1~~	~~R 336.1224 R 336.1225~~
~~3. Total Reduced Sulfur (TRS) based on H_2S~~	~~7.5 ppmv on a dry basis, at 10% oxygen[2]~~	~~24-hour daily~~	~~EU0917-1~~	~~SC VI.1~~	~~R 336.1224 R 336.1225 R 336.1901 40 CFR 52.21(j)(3)~~
~~4. TRS based on H_2S~~	~~1.16 pph[2]~~	~~24-hour daily~~	~~EU0917-1~~	~~SC V.1, VI.1~~	~~R 336.1224 R 336.1225 R 336.1901 40 CFR 52.21(j)(3)~~
~~5. TRS based on H_2S~~	~~10.0 ppmv on a dry basis, at 10% oxygen[2]~~	~~1-hour~~	~~EU0917-1~~	~~SC VI.1~~	~~R 336.1224 R 336.1225 R 336.1901 40 CFR 52.21(j)(3)~~
~~6. TRS based on H_2S~~	~~1.56 pph[2]~~	~~1-hour~~	~~EU0917-1~~	~~SC V.1, VI.1~~	~~R 336.1224 R 336.1225 R 336.1901 40 CFR 52.21(j)(3)~~
~~7.~~1. TRS based on H_2S	8.0 ppmv on a dry basis, at 10% oxygen[2]	12-hour block average	EU0917-1	SC VI.1	R 336.1224, R 336.1225, 40 CFR 60.283(a)(5) 40 CFR 52.21(j)(3)
~~8. TRS based on H_2S~~	~~1.26 pph[2]~~	~~12-hour~~	~~EU0917-1~~	~~SC V.1, VI.1~~	~~R 336.1224 R 336.1225 R 336.1901 40 CFR 52.21(j)(3)~~

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
~~9.~~2. Carbon Monoxide (CO)	0.~~36~~ 64 lb/MM BTU heat input when firing natural gas and/or No. 6 fuel oil[2]	Hourly~~8-hour average~~	EU0917-1	SC V.1	**R 336.2804 40 CFR 52.21(d)**
~~10.~~3. Nitrogen Oxides (NOx)	0.30 lb/MM BTU heat input when firing natural gas and/or No. 6 fuel oil[2]	Hourly~~24-hour daily~~	EU0917-1	SC V.1	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d)**
~~11.~~4. NOx	29 pph[2]	Hourly~~24-hour daily~~	EU0917-1	SC V.1	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d)**
~~12.~~5. PM	0.064 gr/dscf at 10% oxygen[2]	Hourly	EU0917-1	SC V.3, VI.2	**40 CFR 60.282(a)(3)(i) 40 CFR 63.862(a)(1)(i)**
~~13.~~6. PM	16.9 pph[2]	Hourly	EU0917-1	SC V.1, VI.2	**40 CFR 52.21(j)(3)**
7. PM	9.4 pph	Hourly	EU0917-1	SC V.1, VI.2	**R 336.2803, R 336.2804**
8. PM	41.1 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	**R 336.1205(1)(a) & (b)**
9. PM10	9.7 pph	Hourly	EU0917-1	SC V.1, VI.2	**R 336.2803, R 336.2804**
10. PM10	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	**R 336.1205(1)(a) & (b)**
11. PM2.5	9.7 ppy	Hourly	EU0917-1	SC V.1, VI.2	**R 336.2803, R 336.2804**
12. PM2.5	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	**R 336.1205(1)(a) & (b)**
~~14.~~13. ~~Sulfur Dioxide (SO_2)~~	~~120~~ 40 pph[2]	Hourly	EU0917-1	SC ~~V.1,~~ V.2	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d) 40 CFR 52.21(j)(3)**
~~15.~~14. SO_2	1.7 lbs/MM BTUs of heat input[2]	Hourly~~24-hour daily~~	EU0917-1	SC ~~V.1,~~ V.2 SC VI.6	**R 336.1402 R 336.2803 R 336.2804 40 CFR 52.21(c)&(d)**
~~16.~~15. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	68 ppmv on a dry basis, at 10% oxygen[2]	Hourly~~24-hour daily~~	EU0917-1	SC V.1	**R 336.1702(a)**
~~17.~~16. TGNMO measured as total methane	5.0 pph[2]	Hourly	EU0917-1	SC V.1	**R 336.1702(a)**

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II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

~~1. The minimum temperature and residence time of EU0917-1 shall not be less than 1200 degrees F for at least 0.5 second. A temperature of EU0917-1 below 1400 degrees F shall be considered an alert condition and the permittee shall initiate steps to prepare to transfer the CVGs from EU0917-1 to the EU1121-1 should it become necessary.[2] **(R 336.1224, R 336.1225, R 336.1901, R 336.1910, 40 CFR 52.21(j)(3), 40 CFR 60.284)**~~

~~2. The permittee shall not operate EU0917-1 unless the scrubber is operating properly.[2] **(R 336.1224, R 336.1225, R 336.1301, R 336.1331(1)(c), R 336.1901, R 336.1910, 40 CFR 52.21(j)(3))**~~

~~3.~~1. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semiannual period, with the exception of pressure drop during periods of startup and shutdown. The permittee shall implement a corrective action when any 3-hour average parameter value is outside the range of values established as provided in 40 CFR 63.864(j).[2] No more than one exceedance will be attributed to any 24-hour period.[2] **(40 CFR 63.864(k)(1)(ii), 40 CFR 63.864(k)(2), 40 CFR 63.864(k)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0917-1 unless the wet scrubber is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(j)(3), R 336.2803, R 336.2804)**

~~NA~~

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3)~~R 336.1213(3)(b)(ii)~~)**

1. The permittee shall verify ~~Methanol, TRS,~~ CO, NOx, PM, ~~SO_2~~ PM10, PM2.5 and TGNMO emissions from EU0917-1, by testing at owner's expense, in accordance with Department requirements, ~~at a minimum,~~once every five years from the date of the last test. Testing shall be performed using an approved ~~US~~EPA Method listed in:~~.~~

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10	40 CFR Part 51, Appendix M
PM2.5	40 CFR Part 51, Appendix M
TGNMO	40 CFR Part 60, Appendix A

~~1.~~ An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR Part 51 and Appendix M, 40 CFR Part 60 and Appendix A) ~~(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)~~**

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2. Upon request of the AQD District Supervisor, the permittee shall verify SO2 emission rates from EU0917-1, by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
SO_2	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.7, 40 CFR 60.8 and Appendix A)**

~~2. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil.[2] **(R 336.1402)**~~

3. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. ~~The first periodic performance test must be conducted by October 13, 2020.~~ Subsequent periodic tests must be conducted within 5 years following the previous performance test. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through USEPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. Beginning October 11, 2019, the notification of compliance status must be submitted to the USEPA via CEDRI.[2] **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))** ~~**(R 336.1213(3)(b)(ii))**~~

1. The TRS concentration limit shall be determined using a CEMS located downstream of the scrubber and in accordance with the procedures specified in 40 CFR 60.284, 40 CFR Part 60, Appendix F and Performance Specifications 5 & 3.[2] **(40 CFR 60.284, 40 CFR 60 Appendix F and Appendix B PS 5 & 3)**

2. The permittee shall install, calibrate, maintain, monitor and operate a continuous monitoring system to measure and record pressure drop across the scrubber and scrubber liquid flow rate at least once every successive 15 minute period using the procedure in (40 CFR 63.864 (e)(10), 40 CFR 60.13(a).[2] **(40 CFR 63.8, 40 CFR 63.864 (e)(10), 40 CFR 64.6(c)(1)(i), (ii), & (iii))**

3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semi-annual period. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iv), 40 CFR 63.864(k)(3), 40 CFR 64.6(c)(2))**

4. The permittee shall maintain and implement CMS data quality assurance procedures consistent with the requirements in 40 CFR 63.8(d)(1) and (2).[2] **(40 CFR 63.864(f), 40 CFR 63.8(d)(1)-(2))**

5. The permittee shall maintain records, as applicable, specified in 40 CFR 63.866(b) - (d) in addition to the applicable record keeping requirements of 40 CFR 63.10.[2] **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

~~5.~~6. The permittee shall maintain purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing or any other records adequate to demonstrate compliance with the emission limit in SC I.14. **(R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

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~~6. The permittee shall maintain purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing or any other records adequate to demonstrate compliance with the emission limit of 1.7 pounds SO_2 per million BTU's. **(R 336.1213(3))**~~

7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period PM2.5, PM10, and PM emission calculation records for EU0917-1, as required by SC I.8, I.10, and I.12. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(R 336.1910, R 336.1912, 40 CFR 64.9(b)(1))**

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VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit NESHAP semiannual excess emissions reports as specified in 40 CFR Part 63, Subparts MM and A. ~~Beginning October 11, 2019 s~~Semiannual reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability.[2] **(40 CFR 63.867(c), 40 CFR 63.10(e)(3)(v))**

5. The permittee shall submit quarterly EER within 30 days following the end of each calendar quarter.[2] **(40 CFR 60.7(c) & (d))**

6. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10.[2] **(40 CFR 63.867(a), 40 CFR 63.10(d))**

7. The permittee shall submit any performance test reports {including RATA reports} to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(~~R 336.1213(3)(c),~~ R 336.2001(5))**

8. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

9. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

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VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV09-ST-005-001	60[2]	185[2]	**R 336.1225** **R 336.2803** **R 336.2804** **~~40 CFR 52.21(c)&(d)~~**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM - National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand –Alone Semi-chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**

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~~1.~~2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB: New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1019-1 SLAKER
EMISSION UNIT CONDITIONS

DESCRIPTION

SLAKER – Green liquor from the re-causticizing system and lime from the Lime Kiln or purchased lime are mixed in the Slaker to produce white liquor.

Flexible Group ID: ~~NA~~FGPULPINGMOD-1

POLLUTION CONTROL EQUIPMENT

Wet Scrubber

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.03 gr/dscf of exhaust gases[2]	Hourly	EU1019-1	SC VI.1	**R 336.1331(1)(c) 40 CFR 52.21(j)(3)**
*Test protocol shall specify averaging time.					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall immediately cease input feed to EU1019-1, consistent with safe operating procedures, upon initiation of collector bypass. Input feed to EU1019-1 shall not restart until the scrubber is back on line and functioning properly. The permittee shall monitor and record the time(s) when the collector bypass is opened and closed.[2] **(R 336.1301, R 336.1331(1)(c), R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the flow rate to the scrubber.[2] **(R 336.1301, R 336.331(1)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

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2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV10-ST-007-001	28[2]	123[2]	**R 336.2803** **R 336.2804** **40 CFR 52.21(c)&(d)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1121-1 WASTE FUEL BOILER
EMISSION UNIT CONDITIONS

DESCRIPTION

WASTE FUEL BOILER – Installed in 1981; nominal rated heat input capacity of 660 MMBtu/hr. It is a combination fuel boiler capable of burning wood ~~refuse~~residuals, coal and natural gas to produce steam which will be used to supply the existing and new steam turbines at the mill. The Waste Fuel Boiler is also an incineration device for DVGs and/or CVGs. Boiler MACT: Existing source; designed to burn solid fuel; stokers/sloped grate/others designed to burn wet biomass fuel.

Commented [PL11]: Per 9/20/24 pre-application discussion with Michael Conklin, propose to change "refuse" to "residuals" because the word refuse connotes a waste or discarded material, which is not appropriate for the wood based fuel burned in this boiler.

Flexible Group ID: ~~FGWFBMOD-1~~FGPULPINGMOD-1

Commented [PL12]: This flexible group is associated with recordkeeping for PTI100-10, which was complete in 2021.

POLLUTION CONTROL EQUIPMENT

Electrostatic precipitator, multicyclone collector, and over-fired air (OFA)

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Carbon Monoxide (CO)	360 pph[2]	Hourly	EU1121-1	SC V.2, VI.9	**R 336.2804 40 CFR 52.21(d) 40 CFR 52.21(j)(3)**
2. CO	~~1500~~ 1100 ppmv, dry, @ 3% O2	At all times except during startup and shutdown[c][d]	EU1121-1	SC V.4, V.5, V.6, V.7, V.8, V.9, V10, V.11	**40 CFR 63.7500 Table 2.7.a**
3. PM	0.06 lb/MMBTU heat input[2]	Hourly	EU1121-1	SC V.2, VI.5	**R 336.1331(1)(c) 40 CFR 52.21(j)(3)**
4. PM	~~0.037~~ 034 lb/MM BTU heat input[2]	At all times except during startup and shutdown[c][d]	EU1121-1	SC V.4, V.5, V.6, V.7, V.8, V.9, V.10, V.11, V.12	**40 CFR 63.7500 Table 2.7.b**
5. Nitrogen Oxides (NOx)	0.20 lb/MM BTUs heat input when firing natural gas	3-hour average [a][b]	EU1121-1	SC VI.3	**40 CFR 60.44**
6. NOx	0.30 lb/MM BTUs heat input when firing wood and natural gas	3-hour average [a]	EU1121-1	SC VI.3	**40 CFR 60.44**
7. NOx	0.70 lb/MM BTUs heat input when firing coal or coal & wood	3-hour average [a][b]	EU1121-1	SC VI.3	**40 CFR 60.44**
8. NOx	436.8 pph[2] when firing natural gas, wood, coal or any combination of these fuels including when incinerating CVGs and/or DVGs	Hourly	EU1121-1	SC VI.3	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d) 40 CFR 52.21(j)(3)**

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
9. Sulfur Dioxide (SO_2)	476 pph[2]	Hourly	EU1121-1	SC VI.1	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d) 40 CFR 52.21(j)(3)**
10. SO_2	1,016 pph when incinerating CVGs [2]	Hourly	EU1121-1	SC VI.1	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d) 40 CFR 52.21(j)(3)**
11. SO_2	1.2 lbs/MM BTUs of heat input, when firing coal[2]	3-hour average [(a)]	EU1121-1	SC VI.1	**40 CFR Part 60, Subpart D**
12. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	149 ppmv on a dry basis, corrected to 4% oxygen[2]	Hourly	EU1121-1	SC V.2	**R 336.1702(a)**
13. TGNMO measured as total methane	58.2 pph[2]	Hourly	EU1121-1	SC V.2	**R 336.1702(a)**
14. Visible Emissions	20% opacity except for one 6-minute period per hour of not more than 27% opacity	6-minute average	EU1121-1	SC VI.5	**R 336.1301 40 CFR 60.42(a)(2)**
15. Mercury	5.7 4 x 10-6 lb/MMBtu heat input	At all times except during startup and shutdown[(c)][(d)]	EU1121-1	SC V.4, V.5, V.6, V.7, V.8, V.9, V.10, V.11, V.12, V.13, V.14	**40 CFR 63.7500 Table 2.1.b**
16. HCl	2.2 0 x 10-2 lb/MMBtu heat input	At all times except during startup and shutdown[(c)][(d)]	EU1121-1	SC V.4, V.5, V.6, V.7, V.8, V.9, V.10, V.11, V.12, V.13, V.14	**40 CFR 63.7500 Table 2.1a**

a) The allowed averaging time shall automatically become the allowed averaging time in the NSPS for Fossil-Fuel-Fired Steam Generators (Subpart D) if the federal promulgated averaging time for the permittee's generating unit becomes greater or less than the 3-hour average. [2]

b) When different fossil fuels are burned simultaneously in any combination, the applicable emission standard shall be determined by prorating using the formula provided in 40 CFR 60.44(b).[2]

c) These standards apply at all times of operation, except during periods of startup and shutdown, during which time the permittee must comply only with items 5 and 6 of Table 3 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7500(f))**

c)d) Before October 6, 2025 you may comply with the emission limits in Table 15 to 40 CFR Part 63, Subpart DDDDD. On and after October 6, 2025, you must comply with the emission limits in Table 2 to 40 CFR Part 63, Subpart DDDDD.

II. MATERIAL LIMIT(S):

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1. The maximum sulfur content of the coal fuel shall not exceed one percent (1%) sulfur by weight, calculated on 12,000 BTUs per pound and based on a 10-day rolling average.[2] **(R 336.1401, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR Part 60, Subpart D)**

2. The permittee shall only burn fuels as allowed in the Unit designed to burn biomass/bio-based solid subcategory definition in 40 CFR 63.7575. **(40 CFR 63.7499(i) & (p))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall monitor and record the hourly steam load of EU1121-1 and the flow from the DVGs booster fan on a continuous basis in a manner and with instrumentation acceptable to the AQD.[2] **(R 336.1224, R 336.1225, R 336.1901, 40 CFR 52.21)**

2. The minimum steam loads of EU1121-1 when incinerating DVGs and/or CVGs shall not be less than the stable load of 50,000 and 85,000 pounds of steam per hour, respectively, unless an alternate program is demonstrated by the applicant to the satisfaction of the AQD. Additionally, the minimum temperature of EU1121-1 shall not be less than 1200 degrees F with a retention time of at least 0.5 second when incinerating DVG and/or CVGs.[2] **(R 336.1901, 40 CFR 60.283(a)(1)(iii))**

3. The heat input capacity from wet wood ~~refuse~~ residuals for EU1121-1 shall not exceed a maximum of 660 million Btu per hour.[2] **(R 336.1205(1)(a))**

4. The heat input capacity from coal usage for EU1121-1 shall not exceed a maximum of 363 million Btu per hour.[2] **(R 336.1205(1)(a))**

5. The maximum coal feeder conveyor system rate to EU1121-1 shall not exceed 95 percent of the maximum 1.0 hp conveyor system motor output, based on an hourly average.[2] **(R 336.1205(1)(a))**

6. The permittee must meet the requirements in paragraphs (a)(1) through (3) of 40 CFR 63.7500, as listed below, except as provided in paragraphs (b) through (e) of 40 CFR 63.7500, stated in SC III.7. The permittee must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of 40 CFR 63.7500, stated in SC III.8. **(40 CFR 63.7500(a))**
   a. The permittee must meet each emission limit and work practice standard in Tables 2 and 3 of 40 CFR Part 63, Subpart DDDDD that applies to EU1121-1, except as provided under 40 CFR 63.7522. The output-based emission limits, in units of pounds per million Btu of steam output, in Table 2 of 40 CFR Part 63, Subpart DDDDD are an alternative applicable only to boilers and process heaters that generate steam, cogenerate steam with electricity, or both. The output-based emission limits, in units of pounds per megawatt-hour, in Table 2 of 40 CFR Part 63, Subpart DDDDD, are an alternative applicable only to boilers that generate electricity. **(40 CFR 63.7500(a)(1))**
   b. The permittee must meet each operating limit in Table 4 of 40 CFR Part 63, Subpart DDDDD that applies to the boiler or process heater. If the permittee uses a control device or combination of control devices not covered in Table 4 of 40 CFR Part 63, Subpart DDDDD, or the permittee wishes to establish and monitor an alternative operating limit or an alternative monitoring parameter, the permittee must apply to the USEPA Administrator for approval of alternative monitoring under 40 CFR 63.8(f). **(40 CFR 63.7500(a)(2))**
   c. At all times, the permittee must operate and maintain any affected source (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.7500(a)(3))**

7. As provided in 40 CFR 63.6(g), USEPA may approve use of an alternative to the work practice standards in 40 CFR 63.7500. **(40 CFR 63.7500(b))**

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8. These standards apply at all times of operation, except during periods of startup and shutdown, during which time the permittee must comply only with items 5 and 6 of Table 3 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7500(f), 40 CFR 63.7540(d))**

9. The permittee must conduct an annual performance tune-up according to 40 CFR 63.7540(a)(10), stated in Appendix 11-1 or 5-year performance tune-up according to 40 CFR 63.7540(a)(12), stated in Appendix 11-1. Each annual tune-up specified in 40 CFR 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each 5-year tune-up specified in 40 CFR 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. (**40 CFR 63.7515(d))**

See Appendix 11-1

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the coal feeder conveyor system rate to EU1121-1 on a continuous basis.[2] **(R 336.1205(1)(a))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall analyze and record the sulfur content for the coal on an intermittent basis determined by the AQD District Supervisor. The method for coal analysis is specified pursuant to Appendix 4-1. [2] **(R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

2. Upon request from the AQD District Supervisor, the permittee may be required to verify CO, PM, and TGNMO emissions from EU1121-1 in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in 40 CFR Part 60 Appendix A. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The permittee shall submit complete test results to the AQD within 60 days following the last date of the test. **(R 336.1201(3), R 336.2001, R 336.2003, R 336.2004)**

3. The permittee shall analyze and record the heating value, in Btu per pound, of the wet wood ~~refuse~~residuals, on a calendar month basis, in accordance with Department requirements. **(R 336.2001, R 336.2003)**

4. The permittee must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS), continuous parameter monitoring system (CPMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. The permittee may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to 40 CFR 63.7530(c), stated in Appendix 10-1, is less than the applicable emission limit. (For gaseous fuels, the permittee may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) Otherwise, the permittee must demonstrate compliance for HCl, mercury, or TSM using performance testing, if subject to an applicable emission limit listed in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, SC I.3, SC I.14, and SC I.15. **(40 CFR 63.7505(c))**

5. The permittee must conduct each performance test according to the requirements in Table 5 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7520(b))**

6. The permittee must conduct all applicable performance tests according to 40 CFR 63.7520, stated in SC V.5 and SC V.9 through SC V.13, on an annual basis (no more than 13 months after the previous performance test), except as specified in paragraphs (b) through (e), (g), and (h) of 40 CFR 63.7515, stated in SC III.9, SC V.7, SC V.8, V.14 and SC IX.5. **(40 CFR 63.7515(a))**

7. If the performance tests for a given pollutant for at least 2 consecutive years show that the emissions are at or below 75 percent of the emission limit (or, in limited instances as specified in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, SC I.4, SC I.15, and SC I.16, at or below the emission limit) for the pollutant,

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and if there are no changes in the operation of the EU1121-1 or air pollution control equipment that could increase emissions, the permittee may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM. **(40 CFR 63.7515(b))**

8. If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, SC I.4, SC I.15, and SC I.16) for a pollutant, the permittee must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, SC I.4, SC I.15, and SC I.16). **(40 CFR 63.7515(c))**

9. The permittee must conduct all performance tests according to 40 CFR 63.7(c), (d), (f), and (h). The permittee must also develop a site-specific stack test plan according to the requirements in 40 CFR 63.7(c). The permittee shall conduct all performance tests under such conditions as the Administrator specifies to the permittee based on the representative performance of the boiler for the period being tested. Upon request, the permittee shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. **(40 CFR 63.7520(a))**

10. The permittee must conduct each performance test under the specific conditions listed in Tables 5 and 7 of 40 CFR Part 63, Subpart DDDDD. The permittee must conduct performance tests at representative operating load conditions while burning the type of fuel or mixture of fuels that has the highest content of chlorine and mercury, and TSM if the permittee is opting to comply with the TSM alternative standard and the permittee must demonstrate initial compliance and establish the operating limits based on these performance tests. These requirements could result in the need to conduct more than one performance test. Following each performance test and until the next performance test, the permittee must comply with the operating limit for operating load conditions specified in Table 4 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7520(c))**

11. The permittee must conduct a minimum of three separate test runs for each performance test required in 40 CFR 63.7520, as specified in 40 CFR 63.7(e)(3). Each test run must comply with the minimum applicable sampling times or volumes specified in Table 2 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7520(d))**

12. To determine compliance with the emission limits, the permittee must use the F-Factor methodology and equations in sections 12.2 and 12.3 of USEPA Method 19 at 40 CFR Part 60, Appendix A-7 to convert the measured particulate matter (PM) concentrations, the measured HCl concentrations, the measured mercury concentrations, and the measured TSM concentrations that result from the performance test to pounds per million Btu heat input emission rates. **(40 CFR 63.7520(e)**

13. Except for a 30-day rolling average based on CEMS (or sorbent trap monitoring system) data, if measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), the permittee must use the method detection level as the measured emissions level for that pollutant in calculating compliance. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 29 fractions both for individual HAP metals and for total HAP metals) may include a combination of method detection level data and analytical data reported above the method detection level. **(40 CFR 63.7520(f))**

14. If you demonstrate compliance with the mercury and/or HCl emission limits, stated in SC I.14 and SC I.15, based on fuel analysis, you must conduct a monthly fuel analysis according to 40 CFR 63.7521 for each type of fuel burned that is subject to an emission limit in Tables 1, 2, or 11 through 13 to this subpart. You may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in 40 CFR 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, you may decrease the fuel analysis

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frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or you begin burning a new type of fuel, you must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. If sampling is conducted on one day per month, samples should be no less than 14 days apart, but if multiple samples are taken per month, the 14-day restriction does not apply. **(40 CFR 63.7515(e))**

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15. The permittee of an affected source must notify the AQD in writing of his or her intention to conduct a performance test at least 60 calendar days before the performance test is initially scheduled to begin. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(40 CFR 63.7(b)(1), R 336.2001(3))**

16. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test date. **(R 336.2001(4))**

17. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the test. **(R 336.2001(5)**

See Appendices 4-1, 9-1, and 10-1

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Compliance with the SO_2 emission rates shall be determined using CEMS for SO_2 and O_2 located downstream of the ESP.[2] **(40 CFR 60.13)**

2. The permittee shall monitor and record the SO_2 emission rate and oxygen content of the exhaust gases for EU1121-1 in accordance with the NSPS as specified in 40 CFR Part 60, Subparts A and D.[2] **(40 CFR 60.13 and Subparts A & D)**

3. The permittee shall demonstrate compliance with the NOx emission rate using CEMS for NOx and O_2 located downstream of the ESP. The permittee shall monitor and record the pounds per hour on a continuous basis and calculate tons per month of NOx from EU1121-1 in a manner and with instrumentation acceptable to the AQD.[2] **(40 CFR 60.13 & Appendix B)**

4. The permittee shall perform and report Quality Assurance Procedures of the CEMS and submit it to the AQD in a format of the data assessment report (DAR) along with the quarterly EER and summary reports.[2] **(40 CFR Part 60, Subparts A, D, and Appendix F)**

5. The permittee shall calibrate, monitor and record visible emissions on a continuous basis, with certified instrumentation, and in a manner acceptable to the AQD. Opacity shall be determined at the exit of the main stack using a combiner equation acceptable to the AQD.[2] **(40 CFR Part 60.13, 40 CFR Part 60, Appendix B, Performance Specification)**

6. The permittee shall monitor and record, in a satisfactory manner, the amount of wet wood ~~refuse~~ residuals used in EU1121-1 on a calendar month basis.[2] **(R 336.1205(1)(a), R 336.1225)**

7. The permittee shall monitor and record, in a satisfactory manner, the coal feeder conveyor system rate for EU1121-1 on a daily basis, as required in SC III.6.[2] **(R 336.1205(1)(a), R 336.1225)**

8. If the permittee demonstrates compliance with any applicable emission limit through performance testing and subsequent compliance with operating limits through the use of CPMS, or with a CEMS or COMS, the permittee must develop a site-specific monitoring plan according to the requirements in paragraphs (d)(1) through (4) of 40 CFR 63.7505 for the use of any CEMS, COMS, or CPMS. This requirement also applies to the permittee if the permittee petitions the USEPA Administrator for alternative monitoring parameters under 40 CFR 63.8(f). **(40 CFR 63.7505(d))**

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9. If EU1121-1 is subject to a CO emission limit in Table 2 of 40 CFR Part 63, Subpart DDDDD, the permittee must install, operate, and maintain an oxygen analyzer system, as defined in 40 CFR 63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen according to the procedures in paragraphs (a)(1) through (6) of 40 CFR 63.7525. Alternately, the permittee may operate an oxygen trim system with the oxygen level set no lower than the lowest hourly average oxygen concentration measured during the most recent CO performance test as the operating limit for oxygen according to Table 7 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7525(a), 40 63.7525(a)(7))**

10. If the permittee has an applicable opacity operating limit in this rule, the permittee must install, operate, certify and maintain each COMS according to the procedures in paragraphs (c)(1) through (7) of 40 CFR 63.7525. The permittee must maintain opacity to less than or equal to 10 percent opacity or the highest hourly average opacity reading measured during the performance test run demonstrating compliance with the PM (or TSM) emission limitation (daily block average). **(40 CFR 63.7525(c), 40 CFR Part 63, Subpart DDDDD, Table 4.4.a)**

11. If the permittee has an operating limit that requires the use of a CMS other than a PM CPMS or COMS, the permittee must install, operate, and maintain each CMS according to the procedures in paragraphs (d)(1) through (5) of 40 CFR 63.7525. **(40 CFR 63.7525(d))**

12. The permittee must monitor and collect data according to 40 CFR 63.7535 and the site-specific monitoring plan required by 40 CFR 63.7505(d), stated in SC VI.8. **(40 CFR 63.7535(a))**

13. The permittee must operate the monitoring system and collect data at all required intervals at all times that the boiler is operating and compliance is required, except for periods of monitoring system malfunctions or out of control periods (see 40 CFR 63.8(c)(7)), and required monitoring system quality assurance or control activities, including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in the site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. The permittee is required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable. **(40 CFR 63.7535(b))**

14. The permittee may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions, out-of-control periods, or required monitoring system quality assurance or control activities in data averages and calculations used to report emissions or operating levels. The permittee must record and make available upon request results of CMS performance audits and dates and duration of periods when the CMS is out of control to completion of the corrective actions necessary to return the CMS to operation consistent with the site-specific monitoring plan. The permittee must use all the data collected during all other periods in assessing compliance and the operation of the control device and associated control system. **(40 CFR 63.7535(c))**

15. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. In calculating monitoring results, do not use any data collected during periods when the monitoring system is out of control as specified in the site-specific monitoring plan, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities. The permittee must calculate monitoring results using all other monitoring data collected while the process is operating. The permittee must report all periods when the monitoring system is out of control in the annual report. **(40 CFR 63.7535(d))**

16. The permittee must keep records according to paragraphs (a)(1) and (2) of 40 CFR 63.7555, as listed below. **(40 CFR 63.7555(a))**
    a. A copy of each notification and report that the permittee submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance

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Status or semiannual compliance report that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**

b. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). **(40 CFR 63.7555(a)(2))**

17. For each CEMS, COMS, and continuous monitoring system the permittee must keep records according to paragraphs (b)(1) through (5) of 40 CFR 63.7555, as listed below. **(40 CFR 63.7555(b))**
    a. Records described in 40 CFR 63.10(b)(2)(vii) through (xi). **(40 CFR 63.7555(b)(1))**
    b. Monitoring data for continuous opacity monitoring system during a performance evaluation as required in 40 CFR 63.6(h)(7)(i) and (ii). **(40 CFR 63.7555(b)(2))**
    c. Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3). **(40 CFR 63.7555(b)(3))**
    d. Request for alternatives to relative accuracy test for CEMS as required in 40 CFR 63.8(f)(6)(i). **(40 CFR 63.7555(b)(4))**
    e. Records of the date and time that each deviation started and stopped. **(40 CFR 63.7555(b)(5))**

18. The permittee must keep the records required in Table 8 of 40 CFR Part 63, Subpart DDDDD including records of all monitoring data and calculated averages for applicable operating limits, such as opacity and operating load, to show continuous compliance with each emission limit and operating limit that applies to the permittee. **(40 CFR 63.7555(c))**

19. For EU1121-1 subject to an emission limit in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, I.4, I.15 and I.16, the permittee must also keep the applicable records in paragraphs (d)(1) through (11) of 40 CFR 63.7555, as listed below. **(40 CFR 63.7555(d))**
    a. The permittee must keep records of monthly fuel use by EU1121-1, including the type(s) of fuel and amount(s) used. **(40 CFR 63.7555(d)(1))**
    b. If the permittee combusts non-hazardous secondary materials in EU1121-1, the permittee must keep records according to 40 CFR 63.7555(d)(2). **(40 CFR 63.7555(d)(2))**
    c. A copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 7 of 40 CFR 63.7530, stated in Appendix 9-1, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 16 of 40 CFR 63.7530, stated in Appendix 10-1, that were done to demonstrate compliance with the HCl emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum chlorine fuel input or HCl emission rates. **(40 CFR 63.7555(d)(3))**
    d. A copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation 8 of 40 CFR 63.7530, stated in Appendix 9-1, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 17 of 40 CFR 63.7530, stated in Appendix 10-1, that were done to demonstrate compliance with the mercury emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum mercury fuel input or mercury emission rates. **(40 CFR 63.7555(d)(4))**
    e. If, consistent with 40 CFR 63.7515(b), stated in SC V.8, the permittee chooses to stack test less frequently than annually, the permittee must keep a record that documents that the emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Table 2 of 40 CFR Part 63, Subpart DDDDD, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year. **(40 CFR 63.7555(d)(5))**
    f. Records of the occurrence and duration of each malfunction of the boiler or process heater, or of the associated air pollution control and monitoring equipment. **(40 CFR 63.7555(d)(6))**

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g. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.7500(a)(3), stated in SC III.6, including corrective actions to restore the malfunctioning boiler or process heater, air pollution control, or monitoring equipment to its normal or usual manner of operation. **(40 CFR 63.7555(d)(7))**

h. The permittee must maintain records of the calendar date, time, occurrence and duration of each startup and shutdown. **(40 CFR 63.7555(d)(9))**

i. The permittee must maintain records of the type(s) and amount(s) of fuels used during each startup and shutdown of EU1121-1. **(40 CFR 63.7555(d)(10))**

20. Records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). **(40 CFR 63.7560(a))**

21. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. **(40 CFR 63.7560(b))**

22. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(c))**

See Appendices 9-1 and 10-1

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Quarterly EER, within 30 days following the end of each calendar quarter.[2] **(40 CFR 60.7(c) & (d))**

5. The permittee shall submit any performance test reports {including RATA reports} to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

6. The permittee must meet the notification requirements in 40 CFR 63.7545 according to the schedule in 40 CFR 63.7545, and in Subpart A of 40 CFR 63. **(40 CFR 63.7495(d))**

7. The permittee must report the results of performance tests and the associated fuel analyses within 60 days after the completion of the performance tests. This report must also verify that the operating limits for each boiler or process heater have not changed or provide documentation of revised operating limits established according to 40 CFR 63.7530 and Table 7 to 40 CFR Part 63, Subpart DDDDD, as applicable. The reports for all subsequent performance tests must include all applicable information required in 40 CFR 63.7550. **(40 CFR 63.7515(f))**

8. The permittee must report each instance in which the permittee did not meet each emission limit and operating limit in Tables 2 through 4 of 40 CFR Part 63, Subpart DDDDD that apply to the permittee. These instances are deviations from the emission limits or operating limits, respectively, in 40 CFR Part 63, Subpart DDDDD. These deviations must be reported according to the requirements in 40 CFR 63.7550, stated in SC VII.13 and SC VII.14. **(40 CFR 63.7540(b))**

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9. The permittee must submit to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (6), and 40 CFR 63.9(b) through (h) that apply to the permittee by the dates specified. **(40 CFR 63.7545(a))**

10. If the permittee has switched fuels or made a physical change to EU1121-1 and the fuel switch or physical change resulted in the applicability of a different subcategory, the permittee must provide notice of the date upon which the permittee switched fuels or made the physical change within 30 days of the switch/change. The notification must identify:
    a. The name of the owner or operator of the affected source, as defined in 40 CFR 63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice. **(40 CFR 63.7545(h)(1))**
    b. The currently applicable subcategory under 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7545(h)(2))**
    c. The date upon which the fuel switch or physical change occurred. **(40 CFR 63.7545(h)(3))**

11. The permittee must submit each report in Table 9 of 40 CFR Part 63, Subpart DDDDD that applies to the permittee. **(40 CFR 63.7550(a))**

12. Unless the USEPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report, according to paragraph (h) of 40 CFR 63.7550 by the date in Table 9 of 40 CFR Part 63, Subpart DDDDD and according to the requirements in paragraphs (b)(1) through (4) of 40 CFR 63.7550, as listed below. For units that are subject only to a requirement to conduct an annual, biennial, or 5-year tune-up according to 40 CFR 63.7540 (a)(10), (11), or (12), respectively, and not subject to emission limits or Table 4 operating limits, the permittee may submit only an annual, biennial, or 5-year compliance report, as applicable as specified below, instead of a semi-annual compliance report. **(40 CFR 63.7550(b))**
    a. The first semi-annual compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495, January 31, 2016 or as otherwise specified in 40 CFR 63.6(i), and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for the source in 40 CFR 63.7495, January 31, 2016 or as otherwise specified in 40 CFR 63.6(i). If submitting an annual, biennial, or 5-year compliance report, the first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495 and ending on December 31 within 1, 2, or 5 years, as applicable, after the compliance date that is specified in 40 CFR 63.7495. **(40 CFR 63.7550(b)(1))**
    b. The first semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495, January 31, 2016, or as otherwise specified in 40 CFR 63.6(i). The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31. **(40 CFR 63.7550(b)(2))**
    c. Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31. **(40 CFR 63.7550(b)(3))**
    d. Each subsequent compliance report must be postmarked or submitted no later than September 15 or March 15, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-year compliance reports must be postmarked or submitted no later than March 15. **(40 CFR 63.7550(b)(4))**

13. A compliance report must contain the following information depending on how the facility chooses to comply with the limits set in this rule. **(40 CFR 63.7550(c))**
    a. If the facility is subject to the requirements of a tune up they must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii), (xiv) and (xvii) of 40 CFR 63.7550. **(40 CFR 63.7550(c)(1))**

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b. If a facility is complying with the fuel analysis the facility must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii), (x), (xi), (xiii), (xv), (xvii), (xviii) of 40 CFR 63.7550 and paragraph (d) of 40 CFR 63.7550 **(40 CFR 63.7550(c)(2))**

c. If a facility is complying with the applicable emissions limit with performance testing, they must submit a compliance report with the information in (c)(5)(i) through (iii), (vi), (vii), (viii), (ix), (xi), (xiii), xv), (xvii), (xviii) of 40 CFR 63.7550 and paragraph (d) of 40 CFR 63.7550. **(40 CFR 63.7550(c)(3))**

d. If a facility is complying with an emissions limit using a CMS the compliance report must contain the information required in paragraphs (c)(5)(i) through (iii), (v), (vi), (xi) through xiii), (xv) through (xvii) of 40 CFR 63.7550 and paragraph (e) of 40 CFR 63.7550. **(40 CFR 63.7550(c)(4)**

e. 40 CFR 63.7550(c)(5) is as follows:

i. Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**

ii. Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550(c)(5)(ii))**

iii. Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**

iv. The total operating time during the reporting period. **(40 CFR 63.7550(c)(5)(iv))**

v. If the permittee uses a CMS, including CEMS, COMS, or CPMS, the permittee must include the monitoring equipment manufacturer(s) and model numbers and the date of the last CMS certification or audit. **(40 CFR 63.7550(c)(5)(v))**

vi. The total fuel use by each individual boiler or process heater subject to an emission limit within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by the USEPA or the basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure. **(40 CFR 63.7550(c)(5)(vi))**

vii. If the permittee is conducting performance tests once every 3 years consistent with 40 CFR 63.7515(b) or (c), stated in SC V.7 or SC V.8 the date of the last 2 performance tests and a statement as to whether there have been any operational changes since the last performance test that could increase emissions. **(40 CFR 63.7550(c)(5)(vii))**

viii. A statement indicating that the permittee burned no new types of fuel in an individual boiler or process heater subject to an emission limit. Or, if the permittee did burn a new type of fuel and is subject to a HCl emission limit, the permittee must submit the calculation of chlorine input, using Equation 7 of 40 CFR 63.7530, stated in Appendix 9-1, that demonstrates that the source is still within its maximum chlorine input level established during the previous performance testing (for sources that demonstrate compliance through performance testing) or the permittee must submit the calculation of HCl emission rate using Equation 16 of 40 CFR 63.7530, stated in Appendix 10-1, that demonstrates that the source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If the permittee burned a new type of fuel and is subject to a mercury emission limit, the permittee must submit the calculation of mercury input, using Equation 8 of 40 CFR 63.7530, stated in Appendix 9-1, that demonstrates that the source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or the permittee must submit the calculation of mercury emission rate using Equation 17 of 40 CFR 63.7530, stated in Appendix 10-1, that demonstrates that the source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel analysis).

ix. If the permittee wishes to burn a new type of fuel in an individual boiler or process heater subject to an emission limit and the permittee cannot demonstrate compliance with the maximum chlorine input operating limit using Equation 7 of 40 CFR 63.7530, stated in Appendix 9-1, or the maximum mercury input operating limit using Equation 8 of 40 CFR 63.7530, stated in Appendix 9-1, or the maximum TSM input operating limit using Equation 9 of 40 CFR 63.7530, stated in Appendix 9-1, the permittee must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel. **(40 CFR 63.7550(c)(5)(ix))**

x. A summary of any monthly fuel analyses conducted to demonstrate compliance according to 40 CFR 63.7521 and 40 CFR 63.7530, stated in Appendix 10, for individual boilers or process heaters

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subject to emission limits, and any fuel specification analyses conducted according to 40 CFR 63.7521(f). **(40 CFR 63.7550(c)(5)(x))**

xi. If there are no deviations from any emission limits or operating limits in this subpart that apply to the permittee, a statement that there were no deviations from the emission limits or operating limits during the reporting period. **(40 CFR 63.7550(c)(5)(xi))**

xii. If there were no deviations from the monitoring requirements including no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control as specified in 40 CFR 63.8(c)(7), a statement that there were no deviations and no periods during which the CMS were out of control during the reporting period. **(40 CFR 63.7550(c)(5)(xii))**

xiii. If a malfunction occurred during the reporting period, the report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by the permittee during a malfunction of a boiler, process heater, or associated air pollution control device or CMS to minimize emissions in accordance with 40 CFR 63.7500(a)(3), stated in SC III.6, including actions taken to correct the malfunction. **(40 CFR 63.7550(c)(5)(xiii))**

xiv. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10) or 5-year tune-up according to 40 CFR 63.7540(a)(12). Include the date of the most recent burner inspection if it was not done annually or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv))**

xv. If the permittee plans to demonstrate compliance by emission averaging, certify the emission level achieved or the control technology employed is no less stringent than the level or control technology contained in the notification of compliance status in 40 CFR 63.7545(e)(5)(i). **(40 CFR 63.7550(c)(5)(xv))**

xvi. For each reporting period, the compliance reports must include all of the calculated 30 day rolling average values for CEMS (CO, HCl, SO2 and mercury), 10 day rolling average values for CO CEMS when the limit is expressed as a 10 day instead of 30 day rolling average, and the PM CPMS data.

xvii. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

xviii. For each instance of startup or shutdown include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.7555(d).

14. For each deviation from an emission limit or operating limit in 40 CFR Part 63, Subpart DDDDD that occurs at an individual boiler or process heater where the permittee is not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report must additionally contain the information required in paragraphs (d)(1) through (3) of 40 CFR 63.7550, as listed below. **(40 CFR 63.7550(d))**
    a. A description of the deviation and which emission limit, operating limit, or work practice standard from which the permittee deviated. **(40 CFR 63.7550(d)(1))**
    b. Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken. **(40 CFR 63.7550(d)(2))**
    c. If the deviation occurred during an annual performance test, provide the date the annual performance test was completed. **(40 CFR 63.7550(d)(3))**

15. For each deviation from an emission limit, operating limit, and monitoring requirement in 40 CFR Part 63, Subpart DDDDD occurring at an individual boiler or process heater where the permittee is using a CMS to comply with that emission limit or operating limit, the compliance report must additionally contain the information required in paragraphs (e)(1) through (9) of 40 CFR 63.7550, as listed below. This includes any deviations from the site-specific monitoring plan as required in 40 CFR 63.7505(d), stated in SC VI.8. **(40 CFR 63.7550(e))**
    a. The date and time that each deviation started and stopped and description of the nature of the deviation (i.e., what the permittee deviated from). **(40 CFR 63.7550(e)(1))**

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b. The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks. **(40 CFR 63.7550(e)(2))**
c. The date, time, and duration that each CMS was out of control, including the information in 40 CFR 63.8(c)(8). **(40 CFR 63.7550(e)(3))**
d. The date and time that each deviation started and stopped. **(40 CFR 63.7550(e)(4))**
e. A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period. **(40 CFR 63.7550(e)(5))**
f. A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes. **(40 CFR 63.7550(e)(6))**
g. A summary of the total duration of CMS's downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period. **(40 CFR 63.7550(e)(7))**
h. A brief description of the source for which there was a deviation. **(40 CFR 63.7550(e)(8))**
i. A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation. **(40 CFR 63.7550(e)(9))**

16. The permittee must submit the reports according to the procedures specified in paragraphs (h)(1) through (3) of 40 CFR 63.7550, as listed below. **(40 CFR 63.7550(h))**
    a. Within 60 days after the date of completing each performance test (defined in 40 CFR 63.2) required by 40 CFR Part 63, Subpart DDDDD, the permittee must submit the results of the performance tests, including any associated fuel analyses, following the procedure specified in either paragraph (h)(1)(i) or (h)(1)(ii) of 40 CFR 63.7550 as listed below.
        i. For data collected using test methods supported by the USEPA's Electronic Reporting Tool (ERT) as listed on the USEPA's ERT Web site https://www.epa.gov/ttn/chief/ert/index.html, you must submit the results of the performance test to the USEPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the USEPA's Central Data Exchange (CDX) https://cdx.epa.gov/. Performance test data must be submitted in a file format generated through use of the USEPA's ERT or an electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the USEPA's ERT or an alternate electronic file consistent with the XML schema listed on the USEPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the USEPA. The electronic media must be clearly marked as CBI and mailed to USEPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Road, Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the USEPA via the USEPA's CDX as described earlier in this paragraph.
        ii. For data collected using test methods that are not supported by the USEPA's ERT as listed on the USEPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in 40 CFR 63.13.
    b. You must submit all reports required by Table 9 of this subpart electronically to the USEPA via the CEDRI. (CEDRI can be accessed through the USEPA's CDX.) You must use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site https://www.epa.gov/chief once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

See Appendices 8-1, 9-1, and 10-1

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VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV08-ST-004-001	168[2]	299[2]	**R 336.2803 R 336.2804 40 CFR 52.21(c)&(d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall not generate DVGs during startup unless the DVGs can be accepted to either EU0815-1 (the chemical recovery furnace) or EU1121-1 , which has maintained a minimum steam load under stable conditions.[2] **(R 336.1224, R 336.1225, 40 CFR 52.21)**

2. The permittee shall not operate EU1121-1 on coal/wood fuel, including during startup and shutdown, unless the multi-cyclone collector and ESP are operating properly.[2] **(R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

3. The permittee shall maintain EU1121-1's ESP hoppers with level detection devices.[2] **(R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

4. The permittee must demonstrate continuous compliance with the tune-up as specified in Appendix 11-1. **(40 CFR 63.7540(a))**

5. For affected sources (as defined in 40 CFR 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, the permittee must complete the subsequent compliance demonstration no later than 180 days after the re-start of the affected source and according to the applicable provisions in 40 CFR 63.7(a)(2) as cited in Table 10 of 40 CFR Part 63, Subpart DDDDD. The permittee must complete a subsequent tune-up by following the procedures described in 40 CFR 63.7540(a)(10)(i) through (vi), stated in Appendix 11-1, and the schedule described in 40 CFR 63.7540(a)(13), stated in Appendix 11-1, for units that are not operating at the time of their scheduled tune-up. **(40 CFR 63.7515(g))**

6. The permittee must demonstrate continuous compliance with each emission limit in Table 2 of 40 CFR Part 63, Subpart DDDDD, stated in SC I.2, I.4, I.15 and I.16, the work practice standards in Table 3 of 40 CFR Part 63, Subpart DDDDD, and the operating limits in Table 4 of 40 CFR Part 63, Subpart DDDDD that applies according to the methods specified in Table 8 of 40 CFR Part 63, Subpart DDDDD and paragraphs (a)(1) through (19) of 40 CFR 63.7540, as specified in Appendix 11-1. **(40 CFR 63.7540(a))**

7. Table 10 of 40 CFR Part 63, Subpart DDDDD shows which parts of the General Provisions in 40 CFR 63.1 through 40 CFR 63.15 applies to the permittee. **(40 CFR 63.7565)**

See Appendix 11-1

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1122-1 PACKAGE BOILER
EMISSION UNIT CONDITIONS

DESCRIPTION

PACKAGE BOILER – A natural gas-fired boiler that supplies steam to mill processes.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Carbon Monoxide (CO)	0.12 lb/MM BTUs heat input[2]	Hourly/ with steam loading > 80,000 lbs of steam per hour	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
2. CO[(a)]	50.3 pph[2]	Hourly/ with steam loading > 80,000 lbs of steam per hour	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
3. CO	195 ppm[2]	Hourly/ with steam loading ≤ 80,000 lbs of steam per hour	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
4. CO [(a)]	25.5 pph[2]	Hourly/ with steam loading ≤ 80,000 lbs of steam per hour	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
5. CO	195 ppm on, a dry basis[2]	1-hour average during transition times[(c)]	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
6. CO [(a)]	25.5 pph[2]	Hourly/ during transition times[(c)]	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**
7. Nitrogen Oxides (NOx) [(b)]	0.10 lb/MM BTUs heat input[2]	30-day rolling average	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3) 40 CFR 60.44b(a)(1) 40 CFR 60.44b(h)-(i) 40 CFR 60.46b(a) 40 CFR 60.46b(c) 40 CFR 60.46b(e)(1)&(3)**
8. NOx [(a)(b]	41.9 pph[2]	Hourly	EU1122-1	SC VI.1	**40 CFR 52.21(j)(3)**

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Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
9. Volatile Organic Compounds (VOC)	0.014 lb/MM BTUs heat input[2]	Hourly	EU1122-1	SC VI.3	**40 CFR 52.21(j)(3)**
10. VOC	5.87 pph[2]	Hourly	EU1122-1	SC VI.3	**40 CFR 52.21(j)(3)**

a) CO and NOx emissions in pph are calculated using continuous emission monitor data in ppm and the constant stack gas flow rate of 30,000 dscf/min.

b) The NOx standard applies at all times, including periods of startup, shutdown, or malfunction.

c) During the transition times not exceeding a one-hour period when EU1122-1 steam loading is entering or leaving the 80,000 lbs of steam per hour level.

II. MATERIAL LIMIT(S)

1. The permittee shall not fire any fuel in EU1122-1 other than pipeline quality natural gas.[2] **(R 336.1201(3))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must meet the tune-up and Energy Assessment work practice standards for EU1122-1 at the source. **(40 CFR 63.7500(a)(1), 40 CFR Part 63, Subpart DDDDD, Table 3, Nos. 1-4)**

2. The permittee must operate and maintain affected sources in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.7500(a)(3))**

3. The permittee may obtain approval from the Administrator to use an alternative to the work practice standards noted in SC III.1 and/or SC III.2. **(40 CFR 63.7500(b))**

4. The permittee must conduct an annual performance tune-up according to 40 CFR 63.7540(a)(10), stated in Appendix 11-1 or 5-year performance tune-up according to 40 CFR 63.7540(a)(12), stated in Appendix 11-1. Each annual tune-up specified in 40 CFR 63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each 5-year tune-up specified in 40 CFR 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. (**40 CFR 63.7515(d))**

See Appendix 11-1

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

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1. The permittee shall monitor the NOx, and CO emission rates, boiler steam load and oxygen content of the flue gases on a continuous basis in a manner and with instrumentation acceptable to the AQD. The 1-hour average NOx emission rates measured by the NOx CEMS shall be expressed in lb/MMBtu heat input and shall be used to calculate the average emission rates under 40CFR60.44b. The 1-hour NOx averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 3 NOx data points must be used to calculate each 1-hour average.[2] **(40 CFR 60.48b(d), 40 CFR 60.49b)**

2. The permittee shall calibrate, monitor and record visible emissions on a continuous basis, with certified instrumentation, and in a manner acceptable to the AQD. Opacity shall be determined at the exit of the main stack using a combiner equation acceptable to the AQD. **(R 336.1213(3), 40 CFR 60.13, 40 CFR Part 60, Appendix B, Performance Specification)**

3. The permittee shall keep, in a satisfactory manner, records of VOC emission rate calculations for EU1122-1. These calculations shall be based on product throughput rates, and appropriate emission factors. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R 336.1213(3))**

4. The permittee must keep a copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**

5. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(a), (b), and (c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Permittee shall submit quarterly EER, within 30 days following the end of each calendar quarter. **(40 CFR 60.7(c) & (d))**

5. The permittee must submit boiler tune-up compliance reports. Annual or 5 year compliance reports must cover the applicable 1 or 5 year periods from January 1 to December 31. Compliance reports must be postmarked or submitted no later than January 31. Compliance reports must be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI) which is accessed through the USEPA's Central Data Exchange (CDX) https://cdx.epa.gov/. The permittee must use the appropriate electronic report in CEDRI for 40 CFR Part 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR Part 63, Subpart DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site https://www.epa.gov/chief, once the XML schema is available. If the reporting form specific to 40 CFR Part 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee must begin submitting reports via CEDRI no later than 90-days after the form becomes available in CEDRI. **(40 CFR 63.7550(b), 40 CFR 63.10(a)(5), 40 CFR 63.7550(h))**

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6. The permittee must include the following information in the compliance report. **(40 CFR 63.7550(c), 40 CFR 63.7550(c)(1))**
   a. Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**
   b. Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550(c)(5)(ii))**
   c. Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**
   d. Include the date of the most recent tune-up for each unit. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv)**
   e. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. **(40 CFR 63.7550(c)(5)(xvii)**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV10-ST-007-001	168[2]	299[2]	**R 336.1201(3)**

IX. OTHER REQUIREMENT(S)

1. When NOx emissions are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide NOx emissions data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days. **(40 CFR 60.48b(f))**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. **(40 CFR Part 63, Subpart DDDDD)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1128-1 PURCHASED FUEL HOGGING OPERATINGS EMISSION UNIT CONDITIONS

DESCRIPTION

PURCHASED FUEL HOGGING OPERATIONS – DELIVERY SYSTEMS, for purchased hog fuel (wood ~~refuse~~residuals), which is screened and transferred to the hog fuel storage pile, then to the waste fuel boiler (EU1121-1). The new delivery system will have three (3) open air drop points that include the truck dumper, screen operation bypass, and transfer building bypass.

Flexible Group ID: ~~FGWFBMOD-1~~

Commented [PL18]: This flexible group is associated with recordkeeping for PTI100-10, which was complete in 2021.

POLLUTION CONTROL EQUIPMENT

Fabric filter dust collector

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible Emissions	5 percent[2]	6-minute average	Visible emissions from the fabric filter dust collector and drop points within EU1128-1	SC VI.1	**R 336.1301 R 336.2803 R 336.2804 40 CFR 52.21(c)&(d)**
2. PM	0.005 gr/dscf[2]	Hourly	Emissions from the fabric filter dust collector within EU1128-1	SC VI.1 SC VI.2	**R 336.1331(1)(b)**
3. PM	0.90 tpy[2]	12-month rolling, determined at the end of each calendar month	Emissions from the fabric filter dust collector within EU1128-1	SC VI.1 SC VI.2	**R 336.1205(1)(a) R 336.1331(1)(c)**
4. PM10	0.90 tpy[2]	12-month rolling, determined at the end of each calendar month	Emissions from the fabric filter dust collector within EU1128-1	SC VI.1 SC VI.2	**R 336.1205(1)(a) R 336.1331(1)(c)**
5. PM2.5	0.90 tpy[2]	12-month rolling, determined at the end of each calendar month	Emissions from the fabric filter dust collector within EU1128-1	SC VI.1 SC VI.2	**R 336.1205(1)(a) R 336.1331(1)(c)**

II. MATERIAL LIMIT(S)

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Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Purchased Wet Wood ~~Refuse~~ Residuals (hog fuel)	512,000 tons per year[2]	12-month rolling, determined at the end of each calendar month	EU1128-1	SC VI.8	**R 336.1205 R 336.1225**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any portion of EU1128-1 unless the fabric filter with broken bag leak detectors or an alternative monitoring method approved in writing by the AQD District Supervisor is installed and/or implemented, maintained and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each control device and/or implementing each alternative monitoring method in accordance with a Malfunction Abatement Plan (MAP), approvable by the AQD District Supervisor.[2] **(R 336.1901, R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install a device to monitor pressure drop across the fabric filter baghouse. **(40 CFR 64.4(e))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall record weekly non-certified visual opacity observation as an indicator of proper operation of the dust collector. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i and ii))**

2. The permittee shall continuously measure the pressure drop and record a daily reading (or every 15 minutes for an hourly average for large pollutant-specific emission units) as an indicator of proper operation of the dust collector. The indicator range is 0 to 10 inches water column. **(40 CFR 64.6(c)(1)(i & ii))**

3. An excursion is the presence of visible emissions and/or a departure of pressure drop from the indicator range of 0 to 10 inches water column. **(40 CFR 64.6(c)(2))**

4. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). An excursion triggers an inspection, corrective action, and a reporting requirement. **(40 CFR 64.7(d))**

5. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control

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device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

6. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

7. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

8. The permittee shall keep, in a satisfactory manner, calendar month and 12-month rolling records of the wet wood ~~refuse~~ residuals processed through EU1128-1, as required by SC II.1.[2] **(R 336.1205(1)(a), R 336.1225)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. EU1128-1	18.0[2]	67.0[2]	**R 336.2803, R 336.2804 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or

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the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EUCOOLTWR-1 COOLING TOWER EMISSION UNIT CONDITIONS

DESCRIPTION

Cooling Tower - Mechanical induced draft cooling tower equipped with high efficiency drift eliminators.

Flexible Group ID: ~~FGWFBMOD-1~~

Commented [PL19]: This flexible group is associated with recordkeeping for PTI100-10, which was complete in 2021.

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUCOOLTWR-1 unless a MAP as described in Rule 911(2), has been submitted within 180 days of initial start-up, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
   a. A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b. An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.[2] **(R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each cooling tower in EUCOOLTWR-1 with drift eliminators with a vendor-certified maximum drift rate of 0.0009 percent or less.[2] **(R 336.1205, R 336.1331, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

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V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain a record, for each cooling tower in EUCOOLTWR-1, for the life of the cooling tower, of the vendor's certification required in SC IV.1.[2] **(R 336.1205)**

2. The permittee shall calculate the PM and PM10 emissions from each cooling tower in EUCOOLTWR-1 each calendar month, using a method acceptable to the AQD District Supervisor.[2] **(R 336.1205)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOOLTWR1	360.0[2]	47.0[2]	**R 336.2803, R 336.2804 40 CFR 52.21(c) & (d)**
2. SVCOOLTWR2	360.0[2]	47.0[2]	**R 336.2803, R 336.2804 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1227-1 Q41 PAPER MACHINE
EMISSION UNIT CONDITIONS

DESCRIPTION

Q41 PAPER MACHINE – Pulp (from hardwood pulp, softwood pulp, coated broke, and uncoated broke storage) is combined with supplemental chemicals and additives to make various grades of paper.

Flexible Group ID: ~~NA~~FGPULPINGMOD1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	42.71 tpy~~2.9 pph[2]~~	12-month rolling time period as determined at the end of each calendar month~~Hourly~~	EU1227-1	SC V.1, SC VI.3~~SC VI.1~~	**R 336.1205(1)(a) & (b), R 336.1702(c)**
2. PM	13.14 tpy*	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	**R 336.1205(1)(a) & (b), R 336.2810**
3. PM10	126 lb/day**	24-Hour average	EU1227-1	SC II.1, SC VI.1	**R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810**
4. PM10	23.0 tpy	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	**R 336.1205(1)(a) & (b), R 336.2810**
5. PM2.5	108 lb/day***	24-Hour average	EU1227-1	SC II.1, SC VI.1	**R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810**
6. PM2.5	19.71 tpy***	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	**R 336.1205(1)(a) & (b), R 336.2810**

*PM emissions based on an emission rate of 0.04 lbs PM per ton Air Dry Tons Finished Paper (ADTFP) and daily production rate of ADTFP per day.
**PM10 emissions based on an emission rate of 0.07 lbs PM10 per ton ADTFP and daily production rate of ADTFP per day.
***PM2.5 emissions based on an emission rate of 0.06 lbs PM2.5 per ton ADTFP and daily production rate of ADTFP per day.

II. MATERIAL LIMIT(S)

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1. The permittee shall not produce more than 1,800 ADTFP per day based on a 24-hour time period as determined at the end of each calendar day. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c), R 336.2810)** ~~NA~~

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall submit a plan to the AQD District Supervisor for approval, that describes how emissions will be minimized at all times. The plan shall incorporate good operating practices and shall identify the routine and periodic inspection and maintenance activities to ensure optimal operation related to the minimization of particulate emissions. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911)**~~NA~~

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall determine the methanol concentration in the EU1227-1 white-water weekly, at minimum, during weeks of Paper Machine operation. Methanol concentration shall be determined by NCASI Method DI/MEOH-91.03 or an alternative method approved by the AQD District Supervisor. Weekly white-water sample methanol results will be averaged and used to calculate a monthly VOC emission factor. Monthly VOC tons will be calculated using Paper Machine production rates and the VOC emission factor. Monthly VOC emissions will be used to verify compliance with the 12-month rolling VOC tons per year limit. If at any time the 12-month rolling VOC emissions exceed 42.71 tons, the permittee shall increase the white-water sampling and analysis frequency to a minimum of 3 samples per week (during weeks of paper machine operation) and shall review the operating conditions of the bleaching system along with keeping records of corrective actions taken. Once the VOC tons are maintained below the compliance limit for one month, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(c))**~~NA~~

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the daily ADTFP, from EU1227-1, as determined at the end of each calendar day. **(R 336.1205, R 336.1225, R 336.1702(c), R 336.2810)**~~The permittee shall monitor and record the daily paper machine production rate and coating application rate.[2] **(R 336.1201(3))**~~

2. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period PM, PM10, and PM2.5 emissions, using verified emission factors as approved by the AQD district supervisor, and the monthly paper production rate from EU1227-1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.2803, R 336.2804, R 336.2810)**

3. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period VOC emissions for EU1227-1. The calculations shall utilize, at a minimum, weekly white-water sampling data collected in SC V.1, and monthly paper production. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c))**

4. The permittee shall keep daily records of all inspections and maintenance activities for EU1227-1. All records shall be kept on file at the facility and made available to the Department upon request.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

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2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV12-ST-085-001	60[2]	~~89[2]~~90	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
2. SV12-ST-085-002	72[2]	~~89[2]~~89	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
3. SV12-ST-085-003	30[2]	~~88[2]~~88	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
4. SV12-ST-086-001	12[2]	~~90[2]~~91	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
5. SV12-ST-092-001	78[2]	~~89[2]~~90	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
6. SV12-ST-092-002	78[2]	~~90[2]~~90	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
7. SV12-ST-093-001	60	95	R 336.1225, R 336.2803, R 336.2804
~~7.~~8. SV12-ST-094-001	24[2]	~~91[2]~~92	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
~~8. SV12-ST-095-001~~	~~30[2]~~	~~92[2]~~	~~R 336.1201(3)~~
9. SV12-ST-096-001	30[2]	~~90[2]~~92	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
10. SV12-ST-097-001	28[2]	~~94[2]~~91	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
11. SV12-ST-098-001	25[2]	~~94[2]~~95	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
12. SV12-ST-099-001	32[2]	~~90[2]~~91	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
13. SV12-ST-100-001	32[2]	~~90[2]~~91	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
14. SV12-ST-105-001	54[2]	~~89[2]~~90	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
15. SV12-ST-106-001	54[2]	~~89[2]~~90	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
16. SV12-ST-117-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
17. SV12-ST-118-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
18. SV12-ST-119-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~

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Commented [PL20]: Stack IDs corrected with PTI99-20B.

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Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
19. SV12-ST-120-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
20. SV12-ST-121-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~
21. SV12-ST-122-001	~~28[2]~~30	95[2]	R 336.1225, R 336.2803, R 336.2804~~R 336.1201(3)~~

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Commented [PL(21]: Stacks 18, 19, 20, and 21 vent IDs are listed correctly here. A drag-down copy error caused them to be listed incorrectly in PTI 99-20B. They should all have 001 for the last three digits.

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1228-1 FINISHED PAPER TRIMMING EMISSION UNIT CONDITIONS

DESCRIPTION

FINISHED PAPER TRIMMING – Paper rolls on the calendars and rereelers are trimmed to meet customer specifications.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Cyclones, Baghouses

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM-10	0.01 gr/dscf of exhaust gases[2]	Hourly	EU1228-1	SC VI.1	**R 336.1331(1)(c)**
2. PM-10	3.36 pph[2]	Hourly	EU1228-1	SC VI.1	**R 336.1331(1)(c)**
3. Visible Emissions	5% opacity[2]	6-minute average	EU1228-1	SC VI.1	**R 336.1213(3)(a)(ii)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU1228-1 unless the cyclones and baghouses are operating properly.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record weekly non-certified visible opacity observations as an indicator of proper operations of the fabric filter collector. The permittee shall make the records available to the AQD upon request. **(R 336.1213(3)(a)(ii))**

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VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV12-ST-133-001	46[2]	66[2]	**R 336.1201(3)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU1882-1 Q40 PULP DRYER

EMISSION UNIT CONDITIONS

DESCRIPTION

Q40 PULP DRYER – Pulp produced onsite is dewatered, pressed, dried, and cut into bales for transport and sale.

Flexible Group ID: FGPULPINGMOD_1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	24.1 typ	12-month rolling time period as determined at the end of each calendar month	EU1882-1	SC V.1, SC VI.1, SC VI.3	**R 336.1205(1)(a) & (b), R 336.1702(a)**
2. PM	3.25 tpy*	12-month rolling time period as determined at the end of each calendar month	EU1882-1	SC VI.1, SC VI.2	**R 336.1205(1)(a) & (b)**

* Based on an emission factor of 2.00E-02 lb PM/ton pulp.

II. MATERIAL LIMIT(S)

1. The permittee shall not dry more than dry more than 325,000 tons per year, based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall determine the methanol concentration in the EU1882-1 white-water weekly, at minimum, during weeks of Pulp Dryer operation. Methanol concentration shall be determined by NCASI Method DI/MEOH-91.03 or an alternative method approved by the AQD District Supervisor. Weekly white-water sample methanol results will be averaged and used to calculate a monthly VOC emission factor. Monthly VOC tons will be

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calculated using Pulp Dryer production rates and the VOC emission factor. Monthly VOC emissions will be used to verify compliance with the 12-month rolling VOC tons per year limit. If at any time the 12-month rolling VOC emissions exceed 24.1 tons, the permittee shall increase the white-water sampling and analysis frequency to a minimum of 3 samples per week (during weeks of pulp dryer operation) and shall review the operating conditions of the bleaching system along with keeping records of corrective actions taken. Once the VOC tons are maintained below the compliance limit for one month, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the daily and monthly tons of pulp dried from EU1882-1. (**R 336.1205(1)(a) & (b))**

2. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period PM emissions, using industry emission factors and monthly production from EU1882-1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

3. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period VOC emissions for EU1882-1. The calculations shall utilize, at a minimum, weekly white-water sampling data collected in SC V.1 and the monthly production from the pulp dryer. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV18-ST-019-001	48	88	**R 336.1225, R 336.2803, R 336.2804**
2. SV18-ST-019-003	48	88	**R 336.1225, R 336.2803, R 336.2804**
3. SV18-ST-017-001	30	83	**R 336.1225, R 336.2803, R 336.2804**
4. SV18-ST-004-001	36	90	**R 336.1225, R 336.2803, R 336.2804**
5. SV18-ST-011-001	48	91	**R 336.1225, R 336.2803, R 336.2804**

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IX. OTHER REQUIREMENT(S)

NA

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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EU2336-1 CONDENSATE SOURCE GROUP EMISSION UNIT CONDITIONS

DESCRIPTION

CONDENSATE SOURCE GROUP – Collects condensates specified in 40 CFR 63.446(c)(1), (2) or (3). Collected condensates are treated by one or more method identified in 40 CFR 63.446(e).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Condensate Stripper, Pulp Washing System, CVG and DVG systems.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The condensate collection tank shall be equipped so that the fixed roof and all openings will be operated with no detectable leaks, as indicated by an instrument reading of less than 500 ppmv above background. Each opening will be maintained in a closed, sealed position at all times that the tank contains condensates, except when necessary to use the openings for sampling, removal, or for equipment inspection, maintenance, or repair. **(40 CFR 63.446(d)(2))**

2. The condensate collection tank shall be equipped with a water seal device at the top of the tank, and a vent at the top of the fixed roof that is connected, with a closed vent system meeting the requirements in 40 CFR 63.450 to the DVG or CVG collection system. **(40 CFR 63.962(b)(2)(I)(A), 40 CFR 63.446(d)(2)(i), 40 CFR 63.450)**

3. The permittee shall collect and control pulping condensates to comply with 40 CFR 63.446. **(40 CFR 63.6(i), 40 CFR 63.440)**

4. Condensates that are collected for compliance with 40 CFR 63.446 shall be routed through a closed collection system to the condensate collection tank. **(40 CFR 63.446(d)(1))**

5. The closed collection system shall meet the requirements in 40 CFR Part 63, Subpart RR, 40 CFR63.960, 63.961 and 63.962, and the closed vent systems and control devices shall be designed and operated in accordance with 40 CFR 63.443(d) and 63.450. **(40 CFR Part 63, Subpart RR, 40 CFR 63.960, 40 CFR 63.961, 40 CFR 63.962, 40 CFR 63.443(d), 40 CFR 63.446(d)(1), 40 CFR 63.450)**

6. Collected condensate streams shall contain at least 11.1 pounds total HAPs per oven dried ton of pulp on a15-day rolling average basis. **(40 CFR 63.446(c)(3))**

7. Condensate streams shall be treated to remove at least 10.2 pounds total HAPs per oven dried ton of pulp on a 15-day rolling average; and/or condensates collected in the condensate collection tank shall be recycled in a closed collection system to equipment systems captured by the CVG or DVG systems.[2] **(R 336.1201(3), 40 CFR 63.446(e)(1), 40 CFR 63.446(e)(5))**

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8. The condensate collection and treatment system shall be operated in accordance with the applicable CMS parameter value ranges established in accordance with 40 CFR 63.453(n). **(40 CFR 63.453(o))**

9. Records shall be maintained for all periods of excess emissions. Periods of excess emissions from the control device are not violations of 40 CFR 63.446 provided that the time of excess emissions divided by the total process operating time in a semiannual reporting period does not exceed ten (10) percent. **(40 CFR 63.446(g))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall install, calibrate, operate, and maintain on site, according to manufacturer's specifications, a continuous monitoring system (CMS) in accordance with 40 CFR Part 63, as approved by the Department and the USEPA. The CMS shall include a continuous recorder. **(40 CFR 63.453(a), 40 CFR 63.453(i))**

2. The permittee shall comply with the CMS QA/QC and performance evaluation requirements in 40 CFR Part 63, Subpart A recordkeeping requirements, and the condensate collection and treatment CMS. **(40 CFR Part 63, Subpart A, 40 CFR 63.8, 40 CFR 63.10)**

3. The permittee shall prepare and maintain a site-specific inspection plan for the closed collection system, in accordance with 40 CFR 63.454(b). **(40 CFR 63.454(b))**

4. The condensate collection system shall be visually inspected monthly. The inspection and monitoring shall be in accordance with the requirements in 40 CFR Part 63. **(40 CFR 63.453(l), 40 CFR 63.964(a)(1)(A), 40 CFR 63.964(a)(1)(B)(v), 40 CFR 63.964(b)(1) & (2), 40 CFR 63.964(d))**

5. The unburied portion of the collection system piping shall be visually inspected to verify that there are no defects. **(40 CFR 63.964(a)(1)(B)(iii))**

6. The inspection shall include verification that appropriate liquid levels in the water seals in the Condensate Collection Tank (CCT) are being maintained and identification of any other defects that could reduce water seal control effectiveness. **(40 CFR 63.453(1)(2))**

7. The CCT shall be inspected for detectable leaks initially and annually by the procedures in 40 CFR 63.457(d). **(40 CFR 63.453(l))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

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3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall comply with the applicable notification and reporting requirements as specified in 40 CFR Part 63, Subpart A and 40 CFR Part 63, Subpart S. **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.455)**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart S - National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. **(40 CFR Part 63, Subpart S)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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D. FLEXIBLE GROUP SPECIAL CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG2334-1	Concentrated Vent Gas (CVG), low-volume, high-concentration (LVHC) System. Collects off-gases from associated emission units. Collected gases are combusted in the Lime Kiln, Waste Fuel boiler, or Recovery Furnace and/or treated in the CVG scrubber. **(40 CFR Part 63, Subpart S – National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry)**	EU0203-1 EU0204-1 EU0205-1 EU0765-1 EU0766-1 EU0767-1
FG2335-1	Dilute Vent Gas (DVG), high-volume, low-concentration (HVLC) System. Collects off-gases from associated emission units. The following unregulated sources are also included in the DVG collection system: weak black liquor tank, intermediate black liquor tank, black liquor filter reject tank, combined condensate tank, salt cake mix tank, and precipitator surge tank. Collected gases are incinerated in either the waste fuel boiler (primary) or chemical recovery furnace (secondary). **(40 CFR Part 63, Subpart S – National Emissions Standards for Hazardous Air Pollutants from the Pulp and Paper Industry)**	EU0368-1 EU0460-1
FGBBKRAFT-1	KRAFT MILL SUBPART BB SYSTEMS flexible group regulated under CFR 40 Part 60, Subpart BB **(40 CFR Part 60, Subpart BB – Standards of Performance for Kraft Pulp Mills)**	EU0203-1 EU0204-1 EU0205-1 EU0368-1 EU0765-1 EU0766-1 EU0767-1

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Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGBLEACH-1	Bleaching and Extraction Stages for the treatment of washed pulp	EU0508-1 EU0513-1 EU0514-1
FGSOLIDFUEL-1	Coal and hogged fuel processing and transfer	EU1125-1 EU1127-1 EU1137-1
FGCIRICEMACT-1	**40 CFR Part 63, Subpart ZZZZ** - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, existing emergency, compression ignition (CI) RICE less than 500 brake HP.	EU22CI001-1
FGSIRICEMACT-SI	**40 CFR Part 63, Subpart ZZZZ** - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, existing spark ignition RICE less than or equal to 500 brake HP.	EU09SI001-1 EU09SI002-1 EU23SI001-1
FGNSPSSSIICE-1	**40 CFR Part 60, Subpart JJJJ –** Standards of Performance for Stationary Spark Internal Combustion Engines (SI ICE), emergency SI ICE greater than 25 HP manufactured on or after 1/01/2009	EU12SSI001-1
~~FGWFBMOD-1~~	~~Modification to add OFA to the Waste Fuel Boiler (EU1121-1) to increase the heat input capacity; installation of new equipment for delivery and screening of purchased wood refuse fuel; installation of a new steam turbine that will utilize steam from EU1121-1 to produce power for the mill; and a cooling tower.~~	~~EU1121-1~~ ~~EU1128-1~~ ~~EUCOOLTWR-1~~
FGPULPINGMOD-1	Modification to increase pulping and black liquor solids firing rates and paper machine modifications.	EU0815-1 EU0816-1 EU0917-1 EU1121-1 EU1227-1 EU0407-1 FGBLEACH-1 EU1882-1 EU0610-1 EU0611-1 EU0819-1

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FG2334-1 CVG (LVHC) SYSTEM FLEXIBLE GROUP CONDITIONS

DESCRIPTION

CVG (Concentrated Vent Gas) SYSTEM – Collects low volume high concentration (LVHC) off gases from the following associated emission units. The collected gases are combusted in the Lime Kiln, Waste Fuel boiler, or Recovery Furnace and/or treated in the CVG scrubber.

Emission Units:

- EU0203-1 (Chip Bin) – The Chip Bin serves as the feed point for the Digester System.
- EU0204-1 (Digester System) – Chips and cooking additives are combined with steam to produce pulp.
- EU0205-1 (Digester Blow Tank) – Pulp from the digester process is transferred to this tank prior to processing in the Brown Stock Washers.
- EU0765-1 (Evaporator System) – Liquor from the digester and pulp washer systems is processed in the evaporator system to increase the percent solids.
- EU0766-1 (Hotwell) – This unit is part of the evaporator.
- EU0767-1 (Condensate Stripper) – Condensate from the evaporator system is steam-stripped to remove organics.

POLLUTION CONTROL EQUIPMENT

Concentrated Vent Gas (CVG) System gases from the Digester System, Evaporator System, Hotwell, and Condensate Stripper are collected in a closed vent collection system and routed to the Lime Kiln (primary), Waste Fuel Boiler (primary backup), or CVG scrubber (secondary backup) for incineration and/or treatment. Concentrated Vent Gas (CVG) System gases from the Chip Bin and Digester Blow Tank are collected in a closed vent collection system and routed to the Waste Fuel Boiler (primary) or Chemical Recovery Furnace (secondary) for incineration.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the equipment associated with the CVG system unless the CVGs are incinerated in either the lime kiln or wood ~~refuse~~ residuals boiler or if these sources are unavailable, scrubbed in the CVG scrubber, except as provided below for all planned and unplanned CVG switchovers.[2] **(40 CFR 52.21(j)(3), R 336.1901)**

2. The permittee shall switch over the CVG between the lime kiln and the wood ~~refuse~~ residuals boiler as expeditiously as possible during all planned and unplanned switchovers. The permittee shall limit the time of uncontrolled venting of CVG into the atmosphere to a maximum of five minutes during such switchovers. The permittee shall properly operate the CVG scrubber within five minutes of an unplanned switchover. Proper operations means that the white liquor feed rate shall not be less than 10 gallons per minute and the concentration of sodium hydroxide shall not be less than 70 grams per liter for the CVG scrubber.[1] **(R 336.1901)**

3. The permittee shall control HAP emissions from each applicable CVG system to comply with 40 CFR 63.443(a)(1).[2] **(40 CFR 63.6(i), 40 CFR 63.440, 40 CFR 63.443(a)(1))**

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4. The CVG source group emissions shall be enclosed and vented into a closed-vent system and routed to the lime kiln or wood ~~refuse~~ residuals boiler, or recovery furnace.[2] **(40 CFR 63.443(c)**

5. The closed-vent system shall meet the requirements in 40 CFR 63.450.[2] **(40 CFR 63.450(c) & (d))**

6. The emissions from the CVG source group shall be introduced into the lime kiln, wood ~~refuse~~ residuals boiler, or recovery furnace into the flame zone or with the primary fuel or combustion air.[2] **(40 CFR 63.443(d))**

7. Records shall be maintained for all periods of excess emissions. Periods of excess emissions from the CVG source group are not violations of 40 CFR 63.443(c) and (d) provided that the time of excess emissions divided by the total process operating time in a semiannual reporting period does not exceed one (1) percent for control devices used to reduce the total HAP emissions from the CVG system.[2] **(40 CFR 63.443(e)(1))**

8. The permittee shall maintain fresh steam and/or flash steam from the digester blow tank for the EU0203-1 eductor and presteaming, unless the permittee receives AQD District Supervisor's written approval for equally effective proposed alternative odor control.[1] **(R 336.1901)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the white liquor flow rate on a continuous basis during the operation of the CVG scrubber. The white liquor flow rate monitoring system shall be equipped with an audio alarm which will be activated when the emergency vent is operated and the white liquor flow rate is less than 10 gallons per minute for the CVG scrubber.[2] **(R 336.1201(3))**

2. The permittee shall measure and record the sodium hydroxide concentration from the white liquor tank on an intermittent basis as approved by the AQD District Supervisor.[2] **(R 336.1201(3))**

3. For each applicable enclosure opening and closed vent system the permittee shall maintain a site-specific inspection plan.[2] **(40 CFR 63.454(b))**
   a. Each closed-vent system shall be inspected once per month for evidence of visible defects. The visual inspection shall include inspections of reasonably accessible ductwork, piping, enclosures, and connections to covers.[2] **(40 CFR 63.453(k)(1))**
   b. For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in 40 CFR 63.450(c) measured initially and annually by the procedures in 40 CFR 63.457(d).[2] **(40 CFR 63.453(k)(3))**
   c. If an inspection identifies visible defects in the ductwork, piping or connections to covers or in an instrument reading of 500 ppm by volume or greater above background is measured, then corrective actions shall meet the criteria in 40 CFR 63.453(k)(6).[2] **(40 CFR 63.453(k)(6))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

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2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall comply with the applicable notification and reporting requirements as specified in 40 CFR Part 63, Subpart A and 40 CFR Part 63, Subpart S. **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.455, R 336.1901, 40 CFR 52.21)**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63 Subpart S - National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. **(40 CFR Part 63, Subpart S)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FG2335-1 DVG (HVLC) SYSTEM
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

DVG (Dilute Vent Gas) SYSTEM – Collects off high volume low concentration (HVLC) gases from the following emission units which are regulated by the MACT standard Subpart S: Brown Stock Washers (EU0368-1) and Oxygen Delignification System (EU0460-1). The following unregulated sources are also included in the DVG collection system: weak black liquor tank, intermediate black liquor tank, black liquor filter reject tank, combined condensate tank, salt cake mix tank, and precipitator surge tank. Collected gases are incinerated in either the waste fuel boiler (primary) or chemical recovery furnace (secondary).

Emission Units:

- EU0368-1 (Brown Stock Washers) – Pulp from the Digester System is transferred to the Brown Stock Washers where the pulp is screened and cleaned.
- EU0460-1 (Oxygen Delignification System) – Washed brown stock pulp is treated with oxygen and various chemicals to remove lignin.

POLLUTION CONTROL EQUIPMENT

Dilute Vent Gas (DVG) System gases are collected in a closed vent collection system and routed to the Waste Fuel Boiler (primary) or Chemical Recovery Furnace (secondary) for incineration.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall control HAP emissions from each applicable DVG system unit to comply with 40 CFR 63.443(a)(1). **(40 CFR 63.6(i), 40 CFR 63.440, 40 CFR 63.443(a)(1), R 336.1201(3))**

2. The DVG source group emissions shall be enclosed and vented into a closed-vent system and routed to the waste fuel boiler or recovery furnace. **(40 CFR 63.443(c))**

3. The closed-vent system shall meet the requirements in 40 CFR 63.450. **(40 CFR 63.450(c) & (d))**

4. The emissions from the DVG source group shall be introduced into the Waste Fuel Boiler or Recovery Furnace in the flame zone or with the primary fuel or combustion air. **(40 CFR 63.443(d), 40 CFR 52.21(j)(3))**

5. Records shall be maintained for all periods of excess emissions. Periods of excess emissions from the DVG source group are not violations of 40 CFR 63.443(c) and (d) provided that the time of excess emissions divided by the total process operating time in a semiannual reporting period does not exceed four (4) percent for control devices used to reduce the total HAP emissions from the DVG system. **(40 CFR 63.443(e)(2), R 336.1201(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

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V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each applicable enclosure opening, closed vent system, and closed collection system, the permittee shall implement monitoring in accordance with a site-specific inspection plan, in accordance with 40 CFR 63.454(b). **(40 CFR 63.454(b))**

2. The monitoring requirements for enclosure and closed vent systems shall be met:
   a. For each enclosure opening, a visual inspection of the closure mechanism shall be performed at least once every month to ensure the opening is maintained in the closed position and sealed. **(40 CFR 63.453(k))**
   b. Each closed-vent system shall be inspected at least once every month for evidence of visible defects. The visual inspection shall include inspection of reasonably accessible ductwork, piping, enclosures, and connections to covers. **(40 CFR 63.453(k))**
   c. For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in 40 CFR 63.450(c) measured initially and annually by the procedures in 40 CFR 63.457(d). **(40 CFR 63.453(k))**
   d. Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in 40 CFR 63.457(e). **(40 CFR 63.453(k))**
   e. The valve or closure mechanism specified in 40 CFR 63.450(d)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line. **(40 CFR 63.453(k))**
   f. If an inspection identifies visible defects in ductwork, piping, enclosures or connections to covers, or in an instrument reading of 500 ppm by volume or greater above background is measured, or if enclosure openings are not maintained at negative pressure, then corrective actions shall meet the criteria in 40 CFR 63.453(k)(6). **(40 CFR 63.453(k))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall comply with the applicable notification and reporting requirements as specified in 40 CFR Part 63, Subpart A and 40 CFR Part 63, Subpart S. **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.455)**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

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IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart S National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry. **(40 CFR Part 63, Subpart S)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGBBKRAFT-1 KRAFT MILL SUBPART BB SYSTEMS FLEXIBLE GROUP CONDITIONS

DESCRIPTION

KRAFT MILL SUBPART BB SYSTEMS flexible group regulated under CFR 40 Part 60, Subpart BB, applicable to the following associated emission units:

Emission Units:

- EU0203-1 (Chip Bin) – The Chip Bin serves as the feed point for the Digester System
- EU0204-1 (Digester System) – Chips that have been conveyed to the chip bin are metered into the digester. In the digester, chips and cooking additives are combined with steam to produce pulp
- EU0205-1 (Digester Blow Tank) – Pulp from the digester process is transferred to this tank prior to processing in the brown stock washing system
- EU0368-1 (Brown Stock Washers) – Pulp from the digester system is transferred to the brown stock washers where the pulp is screened and cleaned using a water solution
- EU0765-1 (Evaporator System) – Liquor from the digester and pulp washer systems are processed in the evaporator system to increase solids content of the liquor
- EU0766-1 (Hotwell) – This unit is part of the evaporator and receives condensate from the evaporator surface condenser
- EU0767-1 (Condensate Stripper) - Condensate from the evaporator system is steam–stripped to remove organics

POLLUTION CONTROL EQUIPMENT

Vent gasses from EU0204-1, EU0765-1, EU0766-1 and EU0767-1 are collected in the CVG System (FG2334-1) and incinerated in the Lime Kiln or Waste Fuel Boiler. Vent gasses from the EU0203-1, EU0205-1 and EU0368-1 are collected in the DVG System (FG2335-1) and incinerated in the Waste Fuel Boiler or Recovery Furnace.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Total Reduced Sulfur (TRS)	5 ppmv on a dry basis, at 10% oxygen [(a)2]	Hourly	EU0203-1 EU0204-1 EU0205-1 EU0765-1 EU0766-1 EU0767-1	See FG2334-1 SC VI.3a – VI.3c	~~R 336.1901~~ **40 CFR 60.283 (a)(1)(i) & (iii)**
			EU 0368-1	See FG 2335-1 SC VI.1, VI.2a – V1.2f	**R 336.1201(3)** **40 CFR 60.283 (a)(1)(ii) & (iii)**
[(a)] This limit applies unless the gases are combusted in either the Lime Kiln (EU0917-1), Waste Fuel Boiler (EU1121-1), or Recovery Furnace (EU1121-1).					

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II. MATERIAL LIMIT(S)

Material	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Pulp	1786 tons/day~~1725 tons~~[2]	24-hour average~~Per day~~	EU0204-1	SC VI.1	**R 336.1205 5(1)(a) & (b)~~(3)~~ ~~R 336.901~~ R 336.2803 R 336.2804 ~~40 CFR 52.21(c)&(d)~~**
2. Pulp	638,970 tpy~~572,959 tpy~~[2]	12-month rolling time period as determined at the end of each calendar month	EU0204-1	SC VI.1	**R 336.1205 5(1)(a) & (b)~~(3)~~ ~~R 336.901~~ R 336.2803 R 336.2804 ~~40 CFR 52.21(c)&(d)~~**

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III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall route the exhaust gases from the Condensate Stripper, the Digester System, Digester Blow Tank, and Evaporator System to either the Lime Kiln, Waste Fuel Boiler, or Recovery Furnace for incineration.[2] **(R 336.1224, R 336.1225, R 336.1901, R 336.1910, 40 CFR 52.21(j)(3), 40 CFR 60.284, 40 CFR 60.283(a)(1)(i), (ii) & (iii))**

2. The permittee shall not vent the digester low pressure feeder except to the chip bin.[2] **(R 336.1901, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

~~Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))~~

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the tons of pulp produced in EU0204-1 on a daily, monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804)** ~~The permittee shall keep records, on a daily basis and on a 12-month rolling time period basis, of the tons of pulp produced in EU0204-1.[2] (R 336.1205(3), R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c)&(d))~~

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VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

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3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

~~See Appendix 8~~

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB – Standards of Performance for New Stationary Sources: Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGBLEACH-1 BLEACH AND EXTRACTION STAGES FLEXIBLE GROUP CONDITIONS

DESCRIPTION

The units in FGBLEACH-1 are used to whiten brownstock pulp. Bleached and washed pulp is stored in hardwood pulp storage chests prior to being used on the paper machine or converted to dried pulp.

Emission Units:

- EU0508-1 (BLEACH PLANT PROCESS) – Washed pulp is treated with various chemicals for brightening
- EU0513-1 (EXTRACTION STAGE (Eop) TOWER) – Pulp is mixed with chemicals and additives in the Eop tower
- EU0514-1 (EXTRACTION STAGE (Eop) WASHER AND FILTRATE STORAGE) -- pulp from the Eop tower is washed using hot water and filtrate

POLLUTION CONTROL EQUIPMENT

Emissions are treated in the D stage scrubbers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Total Gaseous Non-Methane Organics (TGNMO)	0.10 lb / ton of air-dried bleach pulp[2]	3-hour average	EU0508-1 EU0513-1 EU0514-1	SC VI.1 SC VI.2	**R 336.1702(a)** **40 CFR 52.21(j)(3)**
2. TGNMO	6.0 pph[2]	3-hour average	EU0508-1 EU0513-1 EU0514-1	SC VI.1 SC VI.2	**R 336.1702(a)** **40 CFR 52.21(j)(3)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The emissions of the listed pollutants from the bleach equipment, including the refilling of the towers, and associated with the bleach plant process (EU0508-1), shall not exceed the following mass in pound per hour, nor concentrations in milligrams per cubic meter, corrected to 70 degrees F and 29.92 inches Hg, both based on a 3-hour average:[1] **(R 336.1224(1))**

POLLUTANT	CONCENTRATION (mg/m^3)	MASS (pph)
1. Chlorine	14.8	0.61
2. Chlorine Dioxide	4.2	0.18
3. Chloroform	25.4	1.05
4. Carbon tetrachloride	0.58	0.024

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2. Emissions from applicable equipment in the Bleach Plant Process group (EU0508-1) shall be controlled to meet one of the following:

   a. Reduce the total chlorinated HAP mass in the vent stream entering the control device by 99% or more;
   b. Achieve a treatment device outlet concentration of 10 ppmv or less of total chlorinated HAP; or
   c. Achieve a treatment device outlet mass emission rate of 0.002 pounds of total chlorinated HAP per ton of oven dried pulp.[2] **(40 CFR 63.445(c))**

3. The permittee shall not use sodium of calcium hypochlorite or chlorine for bleaching in the bleaching system (EU0508-1).[2] **(40 CFR 63.445(d))**

4. Regulated emission units in the bleach plant process source group (EU0508-1) shall be enclosed such that HAP emissions generated are vented into a closed-vent system and routed to the bleach plant scrubbers.[2] **(40 CFR 63.445(b))**

5. The enclosures and closed-vent system requirements shall be met for applicable units in the bleach plant process group (EU0508-1).[2] **(40 CFR 63.450(b) - (d))**

6. Each enclosure of applicable units in the bleach plant process group (EU0508-1) shall maintain negative pressure at each enclosure or hood opening demonstrated by procedures in 40 CFR 63.457(e).[2] **(40 CFR 63.457(e))**

7. For applicable equipment in the bleach plant process group (EU0508-1) each enclosure or hood opening closed during the initial performance test shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.[2] **(40 CFR 63.450(b))**

8. The bleach plant scrubber (EU0508-1) shall be operated in accordance with the parameter value ranges established in accordance with 40 CFR 63.453(n).[2] **(40 CFR 63.453(o))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate the bleach equipment (EU0508-1) unless the D100 and D stage scrubbers are operating properly.[2] **(R 336.1910)**

2. The permittee shall not operate the bleach equipment (EU0508-1) unless 100% of the total oxidizing potential of the bleaching compounds added in the D100 tower is chlorine dioxide.[1] **(R 336.1224(1))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall verify chlorinated HAP emission rates from EU0508-1 by testing at the owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 63, Subparts A and S. An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.7, 40 CFR 63.457(a)(1))**

2. The permittee shall verify the chlorinated HAP emission rates (not including chloroform) from EU0508-1, at a minimum, every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 63.457(a)(2), 40 CFR 63.7(b), 40 CFR 63.7(c))**

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3. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Gas scrubber liquid inlet flow rate and gas scrubber effluent pH in the bleach plant process group (EU0508-1) shall be monitored with continuous monitoring systems (CMS). Fan operation shall be measured and recorded as an indicator of gas scrubber vent gas inlet flow rate. The CMS shall be operated and maintained according to the manufacturer's specifications and include a continuous recorder.[2] **(40 CFR 63.453(a) & (c))**

2. For the bleach plant process group (EU0508-1):
   a. For each applicable enclosure opening and closed-vent system the permittee shall maintain a MACT inspection plan.[2] **(40 CFR 63.454(b))**
   b. The monitoring requirement for enclosures and closed vent systems shall be met:[2] **(40 CFR 63.453(k))**
      i. For each enclosure opening, a visual inspection of the closure mechanism shall be performed monthly to ensure the opening is maintained in the closed position and sealed.
      ii. Each closed vent-system shall be inspected monthly for evidence of visible defects. The visual inspection shall include inspection of reasonable accessible ductwork, piping, enclosures, and connections to covers.
      iii. Demonstrate initially and annually that each enclosure opening is maintained at negative pressure.
      iv. If an inspection identifies visible defects in ductwork, piping, enclosures or connections to covers, or if enclosure openings are not maintained at negative pressure, then corrective actions shall meet the criteria in 40 CFR 63.453(k)(6).[2] **(40 CFR 63.453(k)(6))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

5. The permittee shall comply with the notification and reporting requirements of 40 CFR 63.9, 40 CFR 63.10, and 40 CFR 63.455.[2] **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.455)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV05-ST-001-001	40[2]	199[2]	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21(c) & (d)**

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IX. OTHER REQUIREMENT(S)

1. There shall be no visible emissions from the combined bleach plant processes (EU0508-1, EU0513-1, EU0514-1) equipment stack, including the bleach equipment consisting of the D100 washer and D100 seal tank (controlled by the D100 scrubber), the D100 tower, D1 tower, D1 washer and D1 seal tank, D2 tower, D2 washer and D2 seal tank including the refilling of towers (controlled by the D stage scrubber); and the Eop tower, Eop washer, and Eop seal tank.[2] **(R 336.1301(1)(c))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGSOLIDFUEL-1 SOLID FUEL PROCESSING AND TRANSFER FLEXIBLE GROUP CONDITIONS

DESCRIPTION

The FGSOLIDFUEL-1 flexible group addresses coal and hogged fuel processing and transfer.

Emission Units:

- EU1125-1 (COAL CRUSHER/UNLOADING AND HANDLING)
- EU1127-1 (FUEL HOGGING OPERATIONS) – Bark and wood waste from the pulping operations are processed and transferred to the wood yard and wood ~~refuse~~ residuals boiler
- EU1137-1 (HOGGED FUEL/COAL TRANSFER)

POLLUTION CONTROL EQUIPMENT

Baghouse

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.03 gr/dscf of exhaust gases[2]	Hourly	EU1125-1 EU1127-1 EU1137-1	SC VI.2	**40 CFR 52.21(j)(3)**
2. Visible Emissions	0%	6-minute average	EU1125-1 EU1127-1 EU1137-1	SC VI.1	**R 336.1213(3)(a)(ii)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the boiler house coal silo, the coal crusher house, or the hogged fuel operation unless the fabric filter collectors are operating properly.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

The permittee shall install a device to monitor the pressure drop across the fabric filter baghouse. **(40 CFR 64.4(e))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

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1. The permittee shall record a weekly, non-certified visible opacity observations as an indicator of proper operation of the dust collectors. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i & ii))**

2. The permittee shall continuously measure the differential pressure gauge pressure drops and record once per day as an indicator of proper operation of the dust collectors. The averaging period is daily. The monitors shall be calibrated annually. **(40 CFR 64.6(c)(1)(i, ii and iii))**

3. An excursion is the presence of any visible emissions and/or a departure from the differential pressure gauge indicator ranges of:

   - EU1125-1 (Coal Crusher/Unloading and Handling) – 0.1 to 4.0 inches of water column;
   - EU1127-1 (Fuel Hogging Operations) – 0.1 to 4.0 inches of water column;
   - EU1137-1 (Hogged Fuel/Coal Transfer) – 0.05 to1.0 inches of water column **(40 CFR 64.6(c)(2))**

4. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. An excursion response triggers an inspection, corrective action, and a reporting requirement. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

5. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c))**

6. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

7. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions

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and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV11-ST-021-001	18[2]	68[2]	**R 336.1201(3)**
2. SV11-ST-018-001	18[2]	66[2]	**R 336.2803** **R 336.2804** **40 CFR 52.21(c) & (d)**
3. SV11-ST-022-001	18[2]	152[2]	**R 336.1201(3)**

IX. OTHER REQUIREMENT(S)

1. All coal handling and storage, except the outdoor coal storage pile, shall be totally enclosed or equipped with bag filter control equipment.[2] **(R 336.1910, 40 CFR 52.21(j)(3))**

2. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**

3. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGQ41STARCH-1 STARCH HANDLING FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Starch is unloaded, stored and transferred for use on the paper machine.

Emission Units:

EU1229-1 – (Q41 STARCH HANDLING)
EU1239-1 – (Q41 STARCH HANDLING)
EU1240-1 – (Q41 STARCH HANDLING)

POLLUTION CONTROL EQUIPMENT

3 Baghouses

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.01 gr/dscf[2]	Hourly	EU1229-1 EU1239-1 EU1240-1	SC VI.1	**R 336.1331(1)(c)**
2. PM	0.10 pph[2]	Hourly	EU1229-1 EU1239-1 EU1240-1	SC VI.1	**R 336.1331(1)(c)**
3. Opacity	5 percent opacity[2]	6-minute average	EU1229-1 EU1239-1 EU1240-1	SC VI.1	**R 336.1213(3)(a)(ii)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the starch handling and storage equipment unless the baghouses are operating properly.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record weekly non-certified visible opacity observations as an indicator of proper operations of the fabric filter collector. The permittee shall make the records available to the AQD upon request. **(R 336.1213(3)(a)(ii))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV12-ST-037-001	6[2]	76[2]	**R 336.1201(3)**
2. SV12-ST-039-001	6[2]	76[2]	**R 336.1201(3)**
3. SV12-ST-041-001	6[2]	76[2]	**R 336.1201(3)**

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGCIRICEMACT-1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, existing emergency, compression ignition (CI) RICE less than 500 brake HP.

Emission Unit ID: EU22CI001-1 (Fire Water Pump)

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Each engine in FGCIRICEMACT-1 shall be installed, maintained, and operated in a satisfactory manner. The permittee must comply with work practice standards as specified in 40 CFR 63.6602 and Table 2c, Item 1 or the permittee may petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices. The following are the recommended work practices specified in 40 CFR Part 63, Subpart ZZZZ Table 2c:
   a. Change oil and filter every 500 hours of operation or ~~annually~~within 1 year + 30 days of the previous inpsection, whichever comes first, except as allowed in SC III.2,
   b. Inspect the air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inpsection~~annually~~, whichever comes first, and replace as necessary; and
   c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inpsection~~annually~~, whichever comes first, and replace as necessary.

   If the emergency engine is being operated during an emergency and it is not possible to shut down the engine to perform the work practice standards on the schedule required, the work practice standard can be delayed until the emergency is over. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State or local government has been abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, State or local government or which the risk was deemed unacceptable. **(40 CFR 63.6602, 40 CFR Part 63, Subpart ZZZZ Table 2c, Item 1)**

2. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency as oil changes are required. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c of 40 CFR Part 63, Subpart ZZZZ. **(40 CFR 63.6625(i))**

3. The permittee shall install, maintain and operate each engine in FGCIRICEMACT-1 and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine

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in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 63.6605, 40 CFR 63.6625(e))**

4. The permittee shall minimize the time spent at idle during startup and minimize the startup time of each engine in FGCIRICEMACT-1 to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup apply. **(40 CFR 63.6625(h))**

5. There is no time limit on the use of emergency stationary RICE in emergency situations. **(40 CFR 63.6640(f)(1))**

6. The permittee may operate each engine FGCIRICEMACT-1 for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. **(40 CFR 63.6640(f)(2))**

7. Each engine FGCIRICEMACT-1 may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing as provided in 40 CFR 63.6640(f)(2). The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the permittee to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 63.6640(f)(3))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install a non-resettable hour meter on each engine FGCIRICEMACT. **(40 CFR 63.6625(f))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(40 CFR 63.6655)**

1. If using the oil analysis program, the permittee must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. **(40 CFR 63.6625(i))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(40 CFR 63.6655)**

1. For each engine FGCIRICEMACT-1 the permittee shall keep in a satisfactory manner, records to demonstrate continuous compliance with the operating limitations. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(d), 40 CFR 63.6660)**

2. For each engine FGCIRICEMACT-1 the permittee shall keep in a satisfactory manner, records of the maintenance conducted to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the developed maintenance plan. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(e), 40 CFR 63.6660)**

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3. The permittee shall monitor and record the total hours of operation for FGCIRICEMACT-1 per calendar year, recorded through the non-resettable hours meter, in a manner acceptable to the District Supervisor, Air Quality Division. The permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in §63.6640(f)(4)(ii), the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation. **(40 CFR 63.6655(f))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2 Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall comply with the applicable notification and reporting requirements as specified in 40 CFR Part 63, Subpart A and 40 CFR Part 63, Subpart ZZZZ. **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.6650)**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines by the initial compliance date. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

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FGSIRICEMACT-1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, existing spark ignition RICE less than or equal to 100 brake HP.

Emission Units:

- EU09SI001-1 (Lime Mud Storage Tank Auxiliary Gas Engine)
- EU09SI002-1 (Lime Kiln Auxiliary Gas Engine)
- EU23SI001-1 (Admin Computer Room Backup Generator)

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 63.6625(e))**

2. The permittee shall minimize the time spent at idle during startup and minimize the engine startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to 40 CFR Part 63, Subpart ZZZZ apply. **(40 CFR 63.6625(h))**

3. The permittee must demonstrate continuous compliance by following the work practice standards as specified in 40 CFR Part 63, Subpart ZZZZ Table 2c:

   a. Change oil and filter every 1440 hours of operation or within 1 year + 30 days of the previous inpsection~~annually~~, whichever comes first, except as allowed in SC III.4,

   b. Inspect the spark plugs every 1440 hours of operation or within 1 year + 30 days of the previous inpsection~~annually~~, whichever comes first, and replace as necessary; and

   c. Inspect all hoses and belts every 1440 hours of operation or within 1 year + 30 days of the previous inpsection~~annually~~, whichever comes first, and replace as necessary. **(40 CFR 63.6640(a))**

Commented [PL28]: Language change per 8/30/2024 rule revisions to table 2c of 40 CFR 63 Subpart ZZZZ.

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4. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency as oil changes are required. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c of 40 CFR Part 63, Subpart ZZZZ. **(40 CFR 63.6625(j))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(40 CFR 63.6660)**

1. If using the oil analysis program in order to extend the specified oil change requirement in 40 CFR Part 63, Subpart ZZZZ Table 2c, the permittee must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. **(40 CFR 63.6625(j))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(40 CFR 63.6660)**

1. For each engine in FGSIRICEMACT-1 the permittee shall keep in a satisfactory manner, records to demonstrate continuous compliance with operating limitations in SC III.3. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(d), 40 CFR 63.6660)**

2. For each engine in FGSIRICEMACT-1 the permittee shall keep in a satisfactory manner, records of the maintenance conducted to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the developed maintenance plan. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 63.6655(e), 40 CFR 63.6660)**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2 Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall comply with the applicable notification and reporting requirements as specified in 40CFR Part 63, Subpart A and 40 CFR Part 63, Subpart ZZZZ. **(40 CFR 63.9, 40 CFR 63.10, 40 CFR 63.6650)**

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VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, for Stationary Reciprocating Internal Combustion Engines by the initial compliance date. **(40 CFR 63.6595, 40 CFR Part 63, Subparts A and ZZZZ)**

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FGNSPSSSIICE-1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group contains requirements of the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines (SI-ICE), 40 CFR Part 60, Subpart JJJJ, emergency SI ICE greater than 25 HP manufactured on or after 1/1/2009.

Emission Units:

- EU12SSl001-1 (41 Computer Room Backup Generator) — USEPA certified to 40 CFR 1048, natural gas emergency engine 176 HP; engine manufacture date: 4/15/2010; installation date: 12/15/2011

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	2.0 g/HP-hr	Hourly	Emergency HP<130	SC VI.1	**40 CFR 60.4233(e) 40 CFR Part 60, Subpart JJJJ Table 1**
2. CO[(a)]	4.0 g/HP-hr	Hourly	Emergency HP<130	SC VI.1	**40 CFR 60.4233(e) 40 CFR Part 60, Subpart JJJJ Table 1**
3. VOC	1.0 g/HP-hr	Hourly	Emergency HP<130	SC VI.1	**40 CFR 60.4233(e) 40 CFR Part 60, Subpart JJJJ Table 1**

[(a)] For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR Part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to 40 CFR Part 60, Subpart JJJJ, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified. **(40 CFR 60.4233(e))**

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee must demonstrate compliance for EU12SSI001-1 according to one of the methods specified below:

   a. If you operate and maintain the certified stationary SI-ICE and control device according to the manufacturer's emission-related written instructions, you must keep records of maintenance. You must adjust engine settings according to and consistent with the manufacturer's instructions. **(40 CFR 60.4243(a)(1), (40 CFR 60.4243(b)(1))**

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b. If you do not operate and maintain the certified stationary SI-ICE ≥ 100 HP and control device according to the manufacturer's emission-related written instructions, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup. **(40 CFR 60.4243(a)(1), (40 CFR 60.4243(b)(2))**

2. Permittee must operate the emergency stationary ICE according to the requirements in paragraphs (a) through (c) of this condition. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (a) through (c) of this condition, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines (40 CFR 60.4243(d))

   a. There is no time limit on the use of emergency stationary ICE in emergency situations. **(40 CFR 60.4243(d)(1))**

   b. Permittee may operate the emergency stationary ICE for an combination of the purposes specified in paragraph (i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (d)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph. (40 CFR 60.4243(d)(2))

      i. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. **(40 CFR 60.4243(d)(2)(i))**

   c. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (d)(2) of this section. Except as provided in paragraph (i) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. **(40 CFR 60.4243(d)(3))**

      i. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all the following situations are met:

         A. The engine is dispatched by the local balancing authority or local transmission and distribution operator;
         B. The dispatch is intended to mitigate local transmission and/or distribution limitations to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region;
         C. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines;
         D. The power is provided only to the facility itself or to support the local transmission and distribution system.
         E. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and

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distribution system operator may keep these records on behalf of the engine owner or operator. **(40 CFR 60.4243(d)(3)(i))**

3. Owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternate fuel solely during emergency operations but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233. **(40 CFR 60.4243(e))**

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

1. If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a). **(40 CFR 60.4243(f))**

2. Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed. Performance test reports using USEPA Method 18, USEPA Method 320, or ASTM D6348-03 (incorporated by reference—see 40 CFR 60.17) to measure VOC require reporting of all QA/QC data. For Method 18, report results from sections 8.4 and 11.1.1.4; for Method 320, report results from sections 8.6.2, 9.0, and 13.0; and for ASTM D6348-03 report results of all QA/QC procedures in Annexes 1-7. **(40 CFR 60.4245(d))**

VI. MONITORING/RECORDKEEPING

1. The owner or operator must keep records of maintenance conducted on the engine. **(40 CFR 60.4245(a)(2))**

2. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable. **(40 CFR 60.4245(a)(3))**

3. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine meets the emission standards. **(40 CFR 60.4245(a)(4))**

4. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how man hours are spent for non-emergency operation. **(40 CFR 60.4245(a)(4)(b))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2 Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

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3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. After July 1, 2010 for non-emergency SI-ICE <500 HP or January 1, 2011 for emergency stationary SI-ICE >25 HP, the permittee may not install a stationary SI ICE that does not meet the applicable requirements of 40 CFR 60.4233.

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FGWFBMOD-1
FLEXIBLE GROUP CONDITIONS

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DESCRIPTION

Emission units affected by the NSR reform rules for using baseline actual emissions and future projected actual emissions to provide a determination of project-related emissions increases for the modified and affected emission units.

Emission Units:

- EU1121-1
- EU1128-1
- EUCOOLTWR-1

POLLUTION CONTROL EQUIPMENT

Over-fired air and fabric filter dust collector

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the annual emissions of NOx, SO2, PM, PM10, PM2.5, CO, VOC, and H2SO4 from FGWFBMOD-1 described in Appendix 12-1, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of EU1121-1 commence (12/2011) with the OFA installed and shall continue for ten (10) years.[2] **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

See Appendix 12-1

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VII. REPORTING:

1. The permittee shall submit records of the annual emission of NOx, SO2, PM, PM10, PM2.5, CO, VOC, and H2SO4 from FGWFBMOD-1 described in Appendix 12-1, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:
   a. The calendar year actual emission of any pollutant exceeding the baseline actual emissions (BAE) by a significant amount, and
   b. The calendar year actual emissions differ from the pre-construction projection.

   The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to SC VI.1, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection).[2] **(R 336.2818, 40 CFR 52.21(r)(6)(c)(iii))**

See Appendix 12-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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FGPULPINGMOD-1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Emission units affected by the NSR reform rules for using baseline actual emissions and future projected actual emissions to provide a determination of project-related emissions increases for the modified and affected emission units.

Emission Units:
- EU0815-1 Chemical Recovery Furnace
- EU0816-1 Smelt Dissolving Tank
- EU0917-1 Lime Kiln
- EU1121-1 Waste Fuel Boiler
- EU1227-1 Paper Machine
- EU1227-1 Paper Machine Coater Dryers
- EU1882-1 Pulp Dryer
- EU0407-1 White Liquor Oxidation System
- FGBLEACH-1 Bleach and Extraction Stages
- EU0610-1 ClO2 Generating Plant
- EU0611-1 Methanol Storage Tank
- EU0819-1 Slaker

POLLUTION CONTROL EQUIPMENT

EU0815-1 control equipment includes an ESP. EU0816-1 control equipment includes a wet scrubber. EU 0917-1 control equipment includes a wet scrubber. EU1121-1 control equipment includes a multicyclone collector, ESP, and over-fired air system. FGBLEACH-1 control equipment includes two wet scrubbers. EU0407-1 control equipment includes a demister. EU0610-1 control equipment includes wet scrubbers. EU0819-1 includes a wet scrubber.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

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VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the annual emissions of SO2 and VOCs described in Appendix 12, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of EU0815-1 commence and shall continue for ten (10) years. **(R 336.2818)**

VII. REPORTING:

1. The permittee shall submit records of the annual emission of SO2 and VOCs from FGPULPINGMOD-1 described in Appendix 12-1, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:

   a. The calendar year actual emission of any pollutant exceeding the baseline actual emissions (BAE) by a significant amount, and

   b. The calendar year actual emissions differ from the pre-construction projection.

   The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to SC VI.1, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection).[2] **(R 336.2818(3)(f))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
EU0611-1	40 CFR Part 60 Subpart Kb	Storage tank is less than 151 m^3 and the maximum true vapor pressure of the liquid is less than 15.0 kPa.
	40 CFR Part 63 Subpart EEEE	USEPA interpretation: Methanol storage associated with ClO_2 systems are subject to 40 CFR Part 63, Subpart S, therefore are not subject Subpart EEEE .
EU0815-1	Rule 336.1801	The Recovery Furnace does not meet the fossil-fuel-fired definition in the rule because it burns less than 50% fossil fuel.
EU0917-1	Rule 336.1801	The Lime Kiln does not meet the R 336.1801 because it is rated at less than 250 MMBtu/hr heat input.
EU1122-1	Rule R 336.1801	The Package Boiler is subject to an NSPS standard more stringent than R 336.1801, rendering the requirement non – applicable under R 336.1801(14)(a).
EU1227-1	40 CFR Part 63 Subpart JJJJ	USEPA has interpreted that on-machine coating/sizing press operations are considered substrate formation and are not subject to Subpart JJJJ
	40 CFR Part 63 Subpart HHHHH	Q41 coating preparation is related to substrate formation and not subject to Subpart HHHHH
EU0106-1 EU0204-1 EU0205-1 EU0368-1 EU0407-1 EU0508-1 EU0610-1 EU0765-1 EU0766-1 EU0767-1 ~~EU0917-1~~ EU1019-1 EU1122-1 EU1228-1 EU1229-1 EU1239-1 EU1240-1	40 CFR Part 64	The emission units are not subject to Compliance Assurance Monitoring requirements based on the uncontrolled emission rate and/or existing monitoring requirements.

Commented [PL30]: CAM conditions added for EU0917 lime kiln with new PTI99-20B particulate limits.

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Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
FG2334-1 FG2335-1 EU2336-1 EU1121-1		

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APPENDICES

Appendix 1-1. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CEMS	Continuous Emission Monitoring System	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	gr	Grains
		HAP	Hazardous Air Pollutant
EGLE	Michigan Department of Environment, Great Lakes, and Energy	Hg	Mercury
		hr	Hour
EU	Emission Unit	HP	Horsepower
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallons of Applied Coating Solids	kW	Kilowatt
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	m	Meter
HVLP	High Volume Low Pressure*	mg	Milligram
ID	Identification	mm	Millimeter
IRSL	Initial Risk Screening Level	MM	Million
ITSL	Initial Threshold Screening Level	MW	Megawatts
LAER	Lowest Achievable Emission Rate	NMOC	Non-methane Organic Compounds
MACT	Maximum Achievable Control Technology	NO_x	Oxides of Nitrogen
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	Particulate Matter equal to or less than 10 microns in diameter
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
		ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	%	Percent
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SNCR	Selective Non-Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TEQ	Toxicity Equivalence Quotient	µg	Microgram
USEPA/EPA	United States Environmental Protection Agency	µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
VE	Visible Emissions	yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

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Section 1 – Billerud Quinnesec, LLC

Appendix 2-1. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3-1. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 4-1. Recordkeeping

The permittee shall use the following approved formats and procedures for the recordkeeping requirements referenced in EU1121-1. Alternative formats must be approved by the AQD District Supervisor.

Coal Analysis

a. For each new lot of coal received, the permittee shall obtain from the coal supplier a laboratory analysis of the ash content, sulfur content, and the BTU content. The determination of sulfur content shall be carried out in accordance with one of the following procedures: ASTM Method 3177-75 or ASTM Method 4239-85 or an alternative method approved by the AQD District Supervisor. For each coal shipment received, the permittee shall record the date received, source of coal and shipper, and tons received. These records shall be retained by the permittee for a minimum of 5 years and made available to the AQD upon request.

b. At least once per calendar year if a new lot of coal is received, the permittee shall have an analysis performed of the coal ash content, sulfur content, and BTU content for one sample each of eastern coal and western coal (provided both eastern and western coal was supplied during the year). These analyses shall be independent of the analyses received from the coal supplier with each shipment. The determination of coal sulfur content shall be carried out in accordance with one of the following procedures: ASTM Method 3177-75 or ASTM Method 4239-85 or an alternative method approved by the AQD District Supervisor. These records shall be retained by the permittee for a minimum of 5 years and made available to the AQD upon request.

Appendix 5-1. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 6-1. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-B7192-~~2013~~2020. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-B7192-~~2013~~ 2020 is being reissued as Source-Wide PTI No. MI-PTI-B7192-~~2020a~~2025

Permit to Install Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
~~55-12B~~	~~**Digester System** – Chips and cooking additives are combined with steam in the digester to produce pulp.~~	~~EU0204-1, FG2334-1 and FGBBKRAFT-1~~
	~~**Chemical Recovery Furnace** – Capable of burning black liquor solids, salt cake and ESP hopper solids. Also capable of~~	~~EU0815-1~~

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Permit to Install Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
	~~firing natural gas and incinerating vent gases (containing TRS compounds) from the pulping processes.~~	
	~~**Smelt Dissolving Tank** – Inorganics from the chemical recovery furnace and precipitator are mixed with weak wash to form green liquor.~~	~~EU0816-1~~
	~~**CVG System** – Collects gases from the Evaporator System, Digester System, Condensate Stripper. Collected gases are combusted in the lime kiln (primary), waste fuel boiler (backup), or the scrubber system (secondary backup)~~	~~EU0203-1, EU0204-1, EU0205-1, EU0765-1, EU0766-1, EU0767-1 and FG2334-1~~
99-20B*	Chip bin – Chips that have been conveyed to the chip bin are metered, as needed, into the digester through a rotary feed system. Dilute vent gases from the chip bin are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	FG2334-1 FGBBKRAFT-1
	Digester System – Chips and cooking additives are combined with steam in the digester to produce pulp. Concentrated vent gases from the digester system are routed to the Lime Kiln or Waste Fuel Boiler for incineration.	FG2334-1 FGBBKRAFT-1
	Digester Blow Tank – Pulp from the digester process is transferred to this tank prior to processing in the brown stock washing system. Dilute vent gases from the blow tank are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	FG2334-1 FGBBKRAFT-1
	Brown Stock Washers – Pulp from the digester system is transferred to the brown stock washers where the pulp is screened and cleaned using a water solution. Dilute vent gases from the Brown Stock Washers are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	FG2335-1 FGBBKRAFT-1
	White Liquor Oxidation System - White Liquor Oxidation System – A caustic solution is combined with air, steam and spent liquor solution which converts the sodium sulfide to sodium thiosulfate. A demister controls emissions from the White Liquor Oxidation System.	FGPULPINGMOD-1
	Chlorine Dioxide (ClO_2) Generating Plant – Process unit and associated equipment used to make chlorine dioxide (ClO_2). Emissions are controlled by scrubbers.	FGPULPINGMOD-1
	Methanol Storage Tank – The overflow capacity of the tank is 28,000 gallons.	FGPULPINGMOD-1
	Evaporator System – Liquor from the digester and pulp washer systems is processed in the evaporator system to increase solids content of the liquor. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	FG2334-1 FGBBKRAFT-1
	Hotwell – This unit is part of the evaporator system. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	FG2334-1 FGBBKRAFT-1
	Condensate Stripper – Condensate from the evaporator system is steam-stripped to remove organics. CVG Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	FG2334-1 FGBBKRAFT-1
	Chemical Recovery Furnace is capable of burning black liquor solids, salt cake, and ESP hopper solids. Also capable of firing natural gas and incinerating vent gases (containing TRS	FGPULPINGMOD-1

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Permit to Install Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
	compounds) from the pulping processes. Emissions are controlled by an ESP.	
	Smelt Dissolving Tank – Inorganics from the Chemical Recovery Furnace and precipitator are mixed with weak wash to form green liquor. Emissions are controlled by a wet scrubber.	FGPULPINGMOD-1
	Lime Kiln – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.	FGPULPINGMOD-1
	Waste Fuel Boiler – Combination boiler capable of burning wood residuals, coal and natural gas to produce steam used in the mill. Emissions are controlled by a multicyclone collector, ESP and OFA system.	FGPULPINGMOD-1
	Pulp Dryer – Pulp produced onsite is dewatered, pressed, dried, and cut into bales for transport and sale.	FGPULPINGMOD-1
	Q41 Paper Machine – Pulp (from hardwood pulp, softwood pulp, coated broke, and uncoated broke storage) is combined with supplemental chemicals and additives to make various grades of paper.	FGPULPINGMOD-1

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The following table lists the ROP amendments or modifications issued after the effective date of ROP No. MI-ROP-B7192-2020.

Permit to Install Number	ROP Revision Application Number - Issuance Date	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
NA	202200087 / June 6, 2022	To update the CAM indicator range of the pressure drop for the Donaldson baghouse for emission unit EU0102-1, SC VI.3 and SC VI.4. The new indicator range was based on the manufacturer's recommendation, and the range should be between 0.5 to 10.0 inches water column.	EU0102-1

Appendix 7-1. Emission Calculations

Specific emission calculations to be used with monitoring, testing or recordkeeping data are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible group Special Conditions. Therefore, this appendix is not applicable.

Appendix 8-1. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

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Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

Appendix 9-1. Requirements for Demonstrating Compliance through Performance Testing

1. If the permittee demonstrates compliance through performance testing, the permittee must establish each site-specific operating limit in Table 4 of 40 CFR Part 63, Subpart DDDDD that applies according to the requirements in 40 CFR 63.7520, Table 7 of 40 CFR Part 63, Subpart DDDDD, and paragraph (b)(4) of 40 CFR 63.7530, as listed below, as applicable. The permittee must also conduct initial fuel analyses according to 40 CFR 63.7521 and establish maximum fuel pollutant input levels according to paragraphs (b)(1) through (3) of 40 CFR 63.7530, as listed below, as applicable, and as specified in 40 CFR 63.7510(a)(2). (Note that 40 CFR 63.7510(a)(2), exempts certain fuels from the fuel analysis requirements.) However, if the permittee switches fuel(s) and cannot show that the new fuel(s) does (do) not increase the chlorine, mercury, or TSM input into the unit through the results of fuel analysis, then the permittee must repeat the performance test to demonstrate compliance while burning the new fuel(s). **(40 CFR 63.7530(b))**

   a. The permittee must establish the maximum chlorine fuel input (Clinput) during the initial fuel analysis according to the procedures in paragraphs (b)(1)(i) through (iii) of 40 CFR 63.7530, as listed below. **(40 CFR 63.7530(b)(1))**

      i. The permittee must determine the fuel type or fuel mixture that the permittee could burn in the boiler or process heater that has the highest content of chlorine. **(40 CFR 63.7530(b)(1)(i))**

      ii. During the fuel analysis for hydrogen chloride, the permittee must determine the fraction of the total heat input for each fuel type burned (Qi) based on the fuel mixture that has the highest content of chlorine, and the average chlorine concentration of each fuel type burned (Ci). **(40 CFR 63.7530(b)(1)(ii))**

      iii. The permittee must establish a maximum chlorine input level using Equation 7 of 40 CFR 63.7530: **(40 CFR 63.7530(b)(1)(iii))**

$$Clinput = \sum_{i=1}^{n} (Ci \; x \; Qi) \qquad (Eq.\ 7)$$

      Where:
      Clinput = Maximum amount of chlorine entering the boiler or process heater through fuels burned in units of pounds per million Btu.

      Ci = Arithmetic average concentration of chlorine in fuel type, i, analyzed according to 40 CFR 63.7521 (Fuel Analysis Requirements), in units of pounds per million Btu.

      Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If the permittee does not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of "1" for Qi.

      n = Number of different fuel types burned in the boiler or process heater for the mixture that has the highest content of chlorine.

   b. The permittee must establish the maximum mercury fuel input level (Mercuryinput) during the initial fuel analysis using the procedures in paragraphs (b)(2)(i) through (iii) of 40 CFR 63.7530, as listed below. **(40 CFR 63.7530(b)(2))**

      i. The permittee must determine the fuel type or fuel mixture that the permittee could burn in the boiler or process heater that has the highest content of mercury. **(40 CFR 63.7530(b)(2)(i))**

      ii. During the compliance demonstration for mercury, the permittee must determine the fraction of total heat input for each fuel burned (Qi) based on the fuel mixture that has the highest content of mercury, and the average mercury concentration of each fuel type burned (HGi). **(40 CFR 63.7530(b)(2)(ii))**

      iii. The permittee must establish a maximum mercury input level using Equation 8 of 40 CFR 63.7530: **(40 CFR 63.7530(b)(2)(iii))**

$$Mercuryinput = \sum_{i=1}^{n} (HGi \; x \; Qi) \qquad (Eq.\ 8)$$

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Where:
Mercuryinput = Maximum amount of mercury entering the boiler or process heater through fuels burned in units of pounds per million Btu.

HGi = Arithmetic average concentration of mercury in fuel type, i, analyzed according to 40 CFR 63.7521 (Fuel Analysis Requirements), in units of pounds per million Btu.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If the permittee does not burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of "1" for Qi.

n = Number of different fuel types burned in the boiler or process heater for the mixture that has the highest content of mercury.

Appendix 10-1. Fuel Analysis Requirements.

1. For each boiler or process heater that the permittee elects to demonstrate compliance with the applicable emission limits in 40 CFR 63.7500/Table 2 of Subpart DDDDD for HCl, mercury, or TSM through fuel analysis, the permittee's initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in the boiler or process heater according to 40 CFR 63.7521, stated in Conditions 3 through 7 of this Appendix, and Table 6 of 40 CFR Part 63, Subpart DDDDD and establish operating limits according to 40 CFR 63.7530, stated in Condition 8 of this Appendix, and Table 8 of 40 CFR Part 63, Subpart DDDDD. The fuels described in paragraphs (a)(2)(i) and (ii) of 40 CFR 63.7510, are exempt from these fuel analysis and operating limit requirements. The fuels described in paragraph (a)(2)(ii) of 40 CFR 63.7510 are exempt from the chloride fuel analysis and operating limit requirements. Boilers and process heaters that use a CEMS for mercury or HCl are exempt from the performance testing and operating limit requirements specified in paragraph (a) of 40 CFR 63.7510 for the HAP for which CEMS are used. (40 CFR 63.7510(b))

2. If the permittee demonstrates compliance with the mercury, HCl, or TSM emission limits based on fuel analysis, the permittee must conduct a monthly fuel analysis according to 40 CFR 63.7521, stated in Conditions 3 through 11 of this Appendix, for each type of fuel burned that is subject to an emission limit in Table 2 of 40 CFR Part 63, Subpart DDDDD. The permittee may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If the permittee burns a new type of fuel, the permittee must conduct a fuel analysis before burning the new type of fuel in the boiler or process heater. The permittee must still meet all applicable continuous compliance requirements in 40 CFR 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, the permittee may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or the permittee begins burning a new type of fuel, the permittee must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. If sampling is conducted on one day per month, samples should be no less than 14 days apart, but if multiple samples are taken per month, the 14-day restriction does not apply. **(40 CFR 63.7515(e))**

3. For solid and liquid fuels, the permittee must conduct fuel analyses for chloride and mercury according to the procedures in paragraphs (b) through (e) of 40 CFR 63.7521, stated in Conditions 4 through 7 of this Appendix, and Table 6 of 40 CFR Part 63, Subpart DDDDD, as applicable. For solid fuels and liquid fuels, the permittee must also conduct fuel analyses for TSM if the permittee is opting to comply with the TSM alternative standard. For gas 2 (other) fuels, the permittee must conduct fuel analyses for mercury according to the procedures in paragraphs (b) through (e) of 40 CFR 63.7521, stated in Conditions 4 through 7 of this Appendix, and Table 6 of 40 CFR Part 63, Subpart DDDDD, as applicable. (For gaseous fuels, the permittee may not use fuel analyses to comply with the TSM alternative standard or the HCl standard.) For purposes of complying with 40 CFR 63.7521, a fuel gas system that consists of multiple gaseous fuels collected and mixed with each other is considered a single fuel type and sampling and analysis is only required on the combined fuel gas system that will feed the boiler or process heater. Sampling and analysis of the individual gaseous streams prior to combining is not required. The permittee is not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. The permittee is required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury, HCl, or TSM in Table 2 of 40 CFR Part 63,

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Subpart DDDDD. Gaseous and liquid fuels are exempt from the sampling requirements in paragraphs (c) and (d) of 40 CFR 63.7521 stated in Conditions 5 and 6 of this Appendix. **(40 CFR 63.7521(a))**

4. The permittee must develop a site-specific fuel monitoring plan according to the following procedures and requirements in paragraphs (b)(1) and (2) of 40 CFR 63.7521, as listed below, if required to conduct fuel analyses as specified in 40 CFR 63.7510. **(40 CFR 63.7521(b))**
   a. If the permittee intends to use an alternative analytical method other than those required by Table 6 of 40 CFR Part 63, Subpart DDDDD, the permittee must submit the fuel analysis plan to the Administrator for review and approval no later than 60 days before the date that the permittee intends to conduct the initial compliance demonstration described in 40 CFR 63.7510. **(40 CFR 63.7521(b)(1))**
   b. The permittee must include the information contained in paragraphs (b)(2)(i) through (vi) of 40 CFR 63.7521, as listed below, in the fuel analysis plan. **(40 CFR 63.7521(b)(2))**
      i. The identification of all fuel types anticipated to be burned in each boiler or process heater. **(40 CFR 63.7521(b)(2)(i))**
      ii. For each anticipated fuel type, the notification of whether the permittee or a fuel supplier will be conducting the fuel analysis. **(40 CFR 63.7521(b)(2)(ii))**
      iii. For each anticipated fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the composite samples if the procedures are different from paragraph (c) or (d) of 40 CFR 63.7521, stated in Conditions 5 and 6 of this Appendix. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types. **(40 CFR 63.7521(b)(2)(iii))**
      iv. For each anticipated fuel type, the analytical methods from Table 6 of 40 CFR Part 63, Subpart DDDDD, with the expected minimum detection levels, to be used for the measurement of chlorine or mercury. **(40 CFR 63.7521(b)(2)(iv))**
      v. If the permittee requests to use an alternative analytical method other than those required by Table 6 of 40 CFR Part 63, Subpart DDDDD, the permittee must also include a detailed description of the methods and procedures that the permittee is proposing to use. Methods in Table 6 of 40 CFR Part 63, Subpart DDDDD shall be used until the requested alternative is approved. **(40 CFR 63.7521(b)(2)(v))**
      vi. If the permittee will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7521(b)(2)(vi))**

5. You must obtain composite fuel samples for each fuel type according to the procedures in paragraph (c)(1) or (2) of 40 CFR 63.7521, as listed below, or the methods listed in Table 6 of 40 CFR Part 63, Subpart DDDDD, or use an automated sampling mechanism that provides representative composite fuel samples for each fuel type that includes both coarse and fine material. At a minimum, for demonstrating initial compliance by fuel analysis, you must obtain three composite samples. For monthly fuel analyses, at a minimum, you must obtain a single composite sample. For fuel analyses as part of a performance stack test, as specified in 40 CFR 63.7510(a), you must obtain a composite fuel sample during each performance test run. **(40 CFR 63.7521(c))**
   a. If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of 40 CFR 63.7521, as listed below. **(40 CFR 63.7521(c)(1))**
      i. Stop the belt and withdraw a 6-inch wide sample from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. The permittee must collect all the material (fines and coarse) in the full cross-section. The permittee must transfer the sample to a clean plastic bag. **(40 CFR 63.7521(c)(1)(i))**
      ii. Each composite sample will consist of a minimum of three samples collected at approximately equal one-hour intervals during the testing period for sampling during performance stack testing. **(40 CFR 63.7521(c)(1)(ii))**
   b. If sampling from a fuel pile or truck, the permittee must collect fuel samples according to paragraphs (c)(2)(i) through (iii) of 40 CFR 63.7521, as listed below. **(40 CFR 63.7521(c)(2))**

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i. For each composite sample, the permittee must select a minimum of five sampling locations uniformly spaced over the surface of the pile. **(40 CFR 63.7521(c)(2)(i))**

ii. At each sampling site, the permittee must dig into the pile to a uniform depth of approximately 18 inches. The permittee must insert a clean shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling; use the same shovel to collect all samples. **(40 CFR 63.7521(c)(2)(ii))**

iii. The permittee must transfer all samples to a clean plastic bag for further processing. **(40 CFR 63.7521(c)(2)(iii))**

6. The permittee must prepare each composite sample according to the procedures in paragraphs (d)(1) through (7) of 40 CFR 63.7521, as listed below. **(40 CFR 63.7521(d))**
   a. The permittee must thoroughly mix and pour the entire composite sample over a clean plastic sheet. **(40 CFR 63.7521(d)(1))**
   b. The permittee must break large sample pieces (e.g., larger than 3 inches) into smaller sizes. **(40 CFR 63.7521(d)(2))**
   c. The permittee must make a pie shape with the entire composite sample and subdivide it into four equal parts. **(40 CFR 63.7521(d)(3))**
   d. The permittee must separate one of the quarter samples as the first subset. **(40 CFR 63.7521(d)(4))**
   e. If this subset is too large for grinding, the permittee must repeat the procedure in paragraph (d)(3) of 40 CFR 63.7521 with the quarter sample and obtain a one-quarter subset from this sample. **(40 CFR 63.7521(d)(5))**
   f. The permittee must grind the sample in a mill. **(40 CFR 63.7521(d)(6))**
   g. The permittee must use the procedure in paragraph (d)(3) of 40 CFR 63.7521 to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure. **(40 CFR 63.7521(d)(7))**

7. The permittee must determine the concentration of pollutants in the fuel (mercury and/or chlorine and/or TSM) in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 6 of 40 CFR Part 63, Subpart DDDDD, for use in Equations 7, 8, and 9 of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7521(e))**

8. If the permittee elects to demonstrate compliance with an applicable emission limit through fuel analysis, the permittee must conduct fuel analyses according to 40 CFR 63.7521, stated in Conditions 3 through 7 of this Appendix, and follow the procedures in paragraphs (c)(1) through (5) of 40 CFR 63.7530, as listed below. **(40 CFR 63.7530(c))**
   a. If the permittee burns more than one fuel type, the permittee must determine the fuel mixture the permittee could burn in the boiler or process heater that would result in the maximum emission rates of the pollutants that the permittee elects to demonstrate compliance through fuel analysis. **(40 CFR 63.7530(c)(1))**
   b. The permittee must determine the 90th percentile confidence level fuel pollutant concentration of the composite samples analyzed for each fuel type using the one-sided t-statistic test described in Equation 15 of 40 CFR 63.7530: **(40 CFR 63.7530(c)(2))**

$$P90 = mean + (SD\ x\ 1) \qquad (Eq. 15)$$

Where:

P90 = 90th percentile confidence level pollutant concentration, in pounds per million Btu.

Mean = Arithmetic average of the fuel pollutant concentration in the fuel samples analyzed according to 40 CFR 63.7521, stated Conditions 4 through 7 of this Appendix, in units of pounds per million Btu.

SD = Standard deviation of the mean of pollutant concentration in the fuel samples analyzed according to 40 CFR 63.7521, stated in Conditions 4 through 7 of this Appendix, in units of pounds per million Btu. SD is calculated as the sample standard deviation divided by the square root of the number of samples.

t = t distribution critical value for 90th percentile ($t_{0.1}$) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a t-Distribution Critical Value Table.

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c. To demonstrate initial compliance with the applicable emission limit for HCl, the HCl emission rate that the permittee calculates for the boiler or process heater using Equation 16 of 40 CFR 63.7530 must not exceed the applicable emission limit for HCl: **(40 CFR 63.7530(c)(3))**

$$HCI = \sum_{i=1}^{n} (Ci90\ x\ Qi\ x\ 1.028)\ \ (Eq.\ 16)$$

Where:
HCl = HCl emission rate from the boiler or process heater in units of pounds per million Btu.

Ci90 = 90th percentile confidence level concentration of chlorine in fuel type, i, in units of pounds per million Btu as calculated according to Equation 15 of 40 CFR 63.7530, stated in Condition 8b of this Appendix.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If the permittee does not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Qi. For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used along with equation 6.

n = Number of different fuel types burned in the boiler or process heater for the mixture that has the highest content of chlorine.

1.028 = Molecular weight ratio of HCl to chlorine.

d. To demonstrate initial compliance with the applicable emission limit for mercury, the mercury emission rate that the permittee calculates for the boiler or process heater using Equation 17 of 40 CFR 63.7530 must not exceed the applicable emission limit for mercury: **(40 CFR 63.7530(c)(4))**

$$Mercury = \sum_{i=1}^{n} (Hgi90\ x\ Qi)\ \ (Eq.\ 17)$$

Where:

Mercury = Mercury emission rate from the boiler or process heater in units of pounds per million Btu.

Hgi90 = 90th percentile confidence level concentration of mercury in fuel, i, in units of pounds per million Btu as calculated according to Equation 15 of 40 CFR 63.7530, stated in Condition 8b of this Appendix.

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If the permittee does not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Qi. For continuous compliance demonstration, the actual fraction of the fuel burned during the month should be used along with equation 7.

n = Number of different fuel types burned in the boiler or process heater for the mixture that has the highest mercury content.

9. The permittee must report the results of performance tests and the associated fuel analyses within 60 days after the completion of the performance tests. This report must also verify that the operating limits for each boiler or process heater have not changed or provide documentation of revised operating limits established according to 40 CFR 63.7530 and Table 7 of 40 CFR Part 63, Subpart DDDDD, as applicable. The reports for all subsequent performance tests must include all applicable information required in 40 CFR 63.7550. **(40 CFR 63.7515(f))**

Appendix 11-1. Requirements for a Generic 40 CFR 63.7540 Compliance Plan

1. The permittee must demonstrate continuous compliance with each emission limit in Table 2 of 40 CFR Part 63, Subpart DDDDD, the work practice standards in Table 3 of 40 CFR Part 63, Subpart DDDDD, and the operating limits in Table 4 of 40 CFR Part 63, Subpart DDDDD that applies according to the methods specified in Table 8 of 40 CFR Part 63, Subpart DDDDD and paragraphs (a)(1) through (19) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a))**

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a. Following the date on which the initial compliance demonstration is completed or is required to be completed under 40 CFR 63.7 and 40 CFR 63.7510, operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits listed in Table 4 of 40 CFR Part 63, Subpart DDDDD except during performance tests conducted to determine compliance with the emission limits or to establish new operating limits. Operating limits must be confirmed or reestablished during performance tests. **(40 CFR 63.7540(a)(1))**

b. As specified in 40 CFR 63.7550(c), the permittee must keep records of the type and amount of all fuels burned in each boiler or process heater during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in either of the following: **(40 CFR 63.7540(a)(2))**

   i. Lower emissions of HCl, mercury, and TSM than the applicable emission limit for each pollutant, if the permittee demonstrates compliance through fuel analysis. **(40 CFR 63.7540(a)(2)(i))**

   ii. Lower fuel input of chlorine, mercury, and TSM than the maximum values calculated during the last performance test, if the permittee demonstrates compliance through performance testing. **(40 CFR 63.7540(a)(2)(ii))**

c. If the permittee demonstrates compliance with an applicable HCl emission limit through fuel analysis for a solid or liquid fuel and the permittee plans to burn a new type of solid or liquid fuel, the permittee must recalculate the HCl emission rate using Equation 12 of 40 CFR 63.7530 according to paragraphs (a)(3)(i) through (iii) of 40 CFR 63.7540, as listed below. The permittee is not required to conduct fuel analyses for the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii). The permittee may exclude the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii), when recalculating the HCl emission rate. **(40 CFR 63.7540(a)(3))**

   i. The permittee must determine the chlorine concentration for any new fuel type in units of pounds per million Btu, based on supplier data or the permittee's fuel analysis, according to the provisions in the site-specific fuel analysis plan developed according to 40 CFR 63.7521(b). **(40 CFR 63.7540(a)(3)(i))**

   ii. The permittee must determine the new mixture of fuels that will have the highest content of chlorine. **(40 CFR 63.7540(a)(3)(ii))**

   iii. Recalculate the HCl emission rate from the boiler or process heater under these new conditions using Equation 12 of 40 CFR 63.7530. The recalculated HCl emission rate must be less than the applicable emission limit. **(40 CFR 63.7540(a)(3)(iii))**

d. If the permittee demonstrates compliance with an applicable HCl emission limit through performance testing and the permittee plans to burn a new type of fuel or a new mixture of fuels, the permittee must recalculate the maximum chlorine input using Equation 7 of 40 CFR 63.7530. If the results of recalculating the maximum chlorine input using Equation 7 of 40 CFR 63.7530 are greater than the maximum chlorine input level established during the previous performance test, then the permittee must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in 40 CFR 63.7520 to demonstrate that the HCl emissions do not exceed the emission limit. The permittee must also establish new operating limits based on this performance test according to the procedures in 40 CFR 63.7530(b). In recalculating the maximum chlorine input and establishing the new operating limits, the permittee is not required to conduct fuel analyses for and include the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii). **(40 CFR 63.7540(a)(4))**

e. If the permittee demonstrates compliance with an applicable mercury emission limit through fuel analysis, and the permittee plans to burn a new type of fuel, the permittee must recalculate the mercury emission rate using Equation 13 of 40 CFR 63.7530, according to the procedures specified in paragraphs (a)(5)(i) through (iii) of 40 CFR 63.7540, as listed below. The permittee is not required to conduct fuel analyses for the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii). The permittee may exclude the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii) when recalculating the mercury emission rate. **(40 CFR 63.7540(a)(5))**

   i. The permittee must determine the mercury concentration for any new fuel type in units of pounds per million Btu, based on supplier data or the permittee's fuel analysis, according to the provisions in the site-specific fuel analysis plan developed according to 40 CFR 63.7521(b). **(40 CFR 63.7540(a)(5)(i))**

   ii. The permittee must determine the new mixture of fuels that will have the highest content of mercury. **(40 CFR 63.7540(a)(5)(ii))**

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iii. Recalculate the mercury emission rate from the boiler or process heater under these new conditions using Equation 13 of 40 CFR 63.7530. The recalculated mercury emission rate must be less than the applicable emission limit. **(40 CFR 63.7540(a)(5)(iii))**

f. If the permittee demonstrates compliance with an applicable mercury emission limit through performance testing, and the permittee plans to burn a new type of fuel or a new mixture of fuels, the permittee must recalculate the maximum mercury input using Equation 8 of 40 CFR 63.7530. If the results of recalculating the maximum mercury input using Equation 8 of 40 CFR 63.7530 are higher than the maximum mercury input level established during the previous performance test, then the permittee must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in 40 CFR 63.7520 to demonstrate that the mercury emissions do not exceed the emission limit. The permittee must also establish new operating limits based on this performance test according to the procedures in 40 CFR 63.7530(b). The permittee is not required to conduct fuel analyses for the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii). The permittee may exclude the fuels described in 40 CFR 63.7510(a)(2)(i) through (iii), when recalculating the mercury emission rate. **(40 CFR 63.7540(a)(6))**

g. If the boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, the permittee must conduct an annual (13 months) tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of 40 CFR 63.7540, as listed below. This frequency does not apply to limited-use boilers and process heaters, as defined in 40 CFR 63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio. **(40 CFR 63.7540(a)(10))**

i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment. **(40 CFR 63.7540(a)(10)(i))**

ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.7540(a)(10)(ii))**

iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection. **(40 CFR 63.7540(a)(10)(iii))**

iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject. **(40 CFR 63.7540(a)(10)(iv))**

v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.7540(a)(10)(v))**

vi. Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (a)(10)(vi)(A) through (C) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a)(10)(vi))**

(1). The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater. **(40 CFR 63.7540(a)(10)(vi)(A))**

(2). A description of any corrective actions taken as a part of the tune-up. **(40 CFR 63.7540(a)(10)(vi)(B))**

(3). The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. **(40 CFR 63.7540(a)(10)(vi)(C))**

h. If the boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid subcategories, or

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meets the definition of limited-use boiler or process heater in 40 CFR 63.7575, the permittee must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance. The permittee may delay the burner inspection specified in paragraph (a)(10)(i) of this section until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. **(40 CFR 63.7540(a)(12))**

i. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. **(40 CFR 63.7540(a)(13))**

Appendix 12-1. Recordkeeping Provisions for PSD Source Using Actual to Projected-Actual Applicability Test

All information in this Appendix shall be maintained pursuant to R 336.2818 and 40 CFR 52.21(r)(6)(i) for ten years after the emission unit(s) identified in Table C resume normal operations after the OFA has been installed on EU1121-1, and shall be provided to the Department for the first year and thereafter made available to the Department upon request.

A. Project Description:

The Quinnesec Mill, a bleached Kraft pulp and paper mill, is installing a 29 megawatt (MW) steam turbine to generate electricity to support Mill operations and reduce the reliance on purchased electricity. The Mill is also proposing to modify the Waste Refuse Boiler (EU1121-1) to increase its heat input capacity and equipment related to hog fuel handling to increase the hog fuel throughput. Steam generated by EU1121-1 will be used to supply the existing and new steam turbines at the Mill.

B. Applicability Test Description:

The Hybrid Test was used to determine project-related emissions increase for each new, modified, and affected emission unit.

New emissions units: EU1128-1 and EUCOOLTWR.
For these new emission units, the project-related emissions increase (including fugitive emissions) was calculated as the potential-to-emit (PTE).

Modified emission unit: EU1121-1.
For this emission unit, the project-related emissions increase was calculated using the difference between projected actual emissions and baseline actual emissions.

C. Emission Limitations:

Table C

			Emissions (tpy)			
	Emission Unit/Flexible Group ID	**Pollutant**	**Baseline Actual**	**Projected Actual**	**Excluded**	**Reason for Exclusion**
	EU1121-1	NOx	521.60	619.50	70.50	Emissions were annualized during the respective baseline period using a sustained hourly fuel throughput rate, from EU1121-1, over a 3-month period.
		SO2	189.00	291.00	86.70	
		PM	18.90	15.90	2.10	
		PM10	40.50	57.20	8.60	
		PM2.5	38.74	55.36	8.18	
		CO	1,145.30	973.10	136.28	
		VOC	12.50	9.89	0.72	
		H2SO4	14.50	22.30	6.90	

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			Emissions (tpy)			
	Emission Unit/Flexible Group ID	Pollutant	Baseline Actual	Projected Actual	Excluded	Reason for Exclusion
	EU1128-1	PM	0	13.65	0	No emissions excluded, new equipment added to process
		PM10	0	4.10	0	
		PM2.5	0	1.38	0	
	EUCOOLTWR-1	PM	0	0.11	0	No emissions excluded, new equipment
		PM10	0	0.11	0	
		PM2.5	0	0.11	0	

D. Netting Calculations and Discussion: NA

Commented [PL31]: This recordkeeping can be deleted. It was associated with PTI100-10, which was complete in 2021. The new recordkeeping associated with PTI99-20B is added to this section below.

All information in this Appendix shall be maintained pursuant to R 336.2818 and 40 CFR 52.21(r)(6)(i) for ten years after the emission unit(s) identified in Table C resume normal operations and shall be provided to the Department for the first year and thereafter made available to the Department upon request.

A. Project Description:

The Quinnesec Mill is permitted to increase the daily and annual digester pulping limits and recovery furnace black liquor solids firing limits, along with paper machine modifications. The project involves both physical modifications and increased process throughput for affected emission units.

B. Applicability Test Description:

"Actual to Projected Actual" test was used to determine project-related emissions increase for modified and affected emission units.

- Modified emission units: EU0815-1 (Recovery Furnace), EU1227-1 (Paper Machine)
- Affected emission units: EU0816-1 (Smelt Dissolving Tank), EU0917-1 (Lime kiln), EU1121-1 (Waste fuel boiler), EU1227-1 (Paper Machine Coater Dryers), EU1882-1 (Pulp Dryer), EU0407-1 (White Liquor Oxidation System), EU0610-1 (ClO2 Generating Plant), EU0611-1 (Methanol Storage Tank), EU0819-1 (slaker), FGBLEACH-1 (Bleach and Extraction Stages)

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C. FGPULPINGMOD-1 Emission Increases:

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Table C.1

		SO_2 Emissions (tpy)				
Emission Unit/Flexible Group ID	Pollutant	Baseline Actual	Projected Actual	Excluded	Increase / Decrease (+/-)	Reason for Exclusion
EU0815-1	SO_2	4.63	25.0	0.05	20.3	Emissions were annualized during the respective baseline period using a three-month sustained BLS throughput rate, from EU0815-1.
EU0816-1	SO_2	2.24	2.47	0.03	0.20	
EU0917-1	SO_2	0.36	0.38	0.03	0	
EU1121-1	SO_2	246.89	911.08	661.98	2.21	
EU1227-1	SO_2	0.04	0.06	0	0.02	
Total		254.16	938.99	662.1	**22.73**	

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		VOC Emissions (tpy)				
Emission Unit/Flexible Group ID	**Pollutant**	**Baseline Actual**	**Projected Actual**	**Excluded**	**Increase / Decrease (+/-)**	**Reason for Exclusion**
EU0407-1	VOC	0.73	0.79	0.07	0	Emissions were annualized during the respective baseline period using a three-month sustained BLS throughput rate, from EU0815-1.
FGBLEACH-1	VOC	7.41	8.89	0.33	1.15	
EU1227-1 (Paper Machine)	VOC	8.47	42.71	0	34.24	
EU1227-1 (Coater Dryers)	VOC	0.38	0.57	0.13	0.06	
EU1882-1	VOC	19.40	24.05	2.35	2.3	
EU0610-1	VOC	0.04	0.05	0.00492	0.0051	
EU0611-1	VOC	0.23	0.29	0.02	0	
EU0815-1	VOC	15.08	16.63	0.17	1.38	
EU0816-1	VOC	4.18	4.61	0.05	0.38	
EU0917-1	VOC	7.63	8.20	0.69	-0.12	
EU0819-1	VOC	0.66	0.70	0.06	-0.02	
EU1121-1	VOC	5.25	6.70	1.37	0.08	
Total		69.46	114.19	5.24	**39.48**	

D. Netting Calculations and Discussion: NA

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

January 11, 2023

PERMIT TO INSTALL
99-20B

ISSUED TO
Billerud Quinnesec, LLC

LOCATED AT
W-6791 U.S. Highway 2
Quinnesec, Michigan 49876

IN THE COUNTY OF
Dickinson

STATE REGISTRATION NUMBER
B7192

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **November 2, 2022**	
DATE PERMIT TO INSTALL APPROVED: **January 11, 2023**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU0203-1	Chip bin – Chips that have been conveyed to the chip bin are metered, as needed, into the digester through a rotary feed system. Dilute vent gases from the chip bin are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981 08/02/1989 04/01/2008	FG2334-1 FGBBKRAFT-1
EU0204-1	Digester System – Chips and cooking additives are combined with steam in the digester to produce pulp. Concentrated vent gases from the digester system are routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981 04/01/2008 05/01/2012 10/31/2018	FG2334-1 FGBBKRAFT-1
EU0205-1	Digester Blow Tank – Pulp from the digester process is transferred to this tank prior to processing in the brown stock washing system. Dilute vent gases from the blow tank are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1
EU0368-1	Brown Stock Washers – Pulp from the digester system is transferred to the brown stock washers where the pulp is screened and cleaned using a water solution. Dilute vent gases from the Brown Stock Washers are routed to the Waste Fuel Boiler or Recovery Furnace for incineration.	06/01/1981 05/01/1990 04/01/2008	FG2335-1 FGBBKRAFT-1
EU0407-1	White Liquor Oxidation System - White Liquor Oxidation System – A caustic solution is combined with air, steam and spent liquor solution which converts the sodium sulfide to sodium thiosulfate. A demister controls emissions from the White Liquor Oxidation System.	05/01/1990	FGPULPINGMOD-1
EU0610-1	Chlorine Dioxide (ClO_2) Generating Plant – Process unit and associated equipment used to make chlorine dioxide (ClO_2). Emissions are controlled by scrubbers.	06/01/1981 04/01/1994 04/01/2008	FGPULPINGMOD-1
EU0611-1	Methanol Storage Tank – The overflow capacity of the tank is 28,000 gallons.	04/01/1994	FGPULPINGMOD-1
EU0765-1	Evaporator System – Liquor from the digester and pulp washer systems is processed in the evaporator system to increase solids content of the liquor. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981 04/01/2008	FG2334-1 FGBBKRAFT-1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU0766-1	Hotwell – This unit is part of the evaporator system. Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1
EU0767-1	Condensate Stripper – Condensate from the evaporator system is steam-stripped to remove organics. CVG Emissions are collected in the CVG system and routed to the Lime Kiln or Waste Fuel Boiler for incineration.	06/01/1981	FG2334-1 FGBBKRAFT-1
EU0815-1	Chemical Recovery Furnace is capable of burning black liquor solids, salt cake, and ESP hopper solids. Also capable of firing natural gas and incinerating vent gases (containing TRS compounds) from the pulping processes. Emissions are controlled by an ESP.	06/01/1981 05/30/1995 04/01/2008 05/01/2012 10/31/2018	FGPULPINGMOD-1
EU0816-1	Smelt Dissolving Tank – Inorganics from the Chemical Recovery Furnace and precipitator are mixed with weak wash to form green liquor. Emissions are controlled by a wet scrubber.	06/01/1981 04/01/2008 05/01/2012	FGPULPINGMOD-1
EU0917-1	Lime Kiln – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.	06/01/1981	FGPULPINGMOD-1
EU1121-1	Waste Fuel Boiler – Combination boiler capable of burning wood refuse, coal and natural gas to produce steam used in the mill. Emissions are controlled by a multicyclone collector, ESP and OFA system.	06/01/1981 10/22/2010	FGWFBMOD-1 FGPULPINGMOD-1
EU1882-1	Pulp Dryer – Pulp produced onsite is dewatered, pressed, dried, and cut into bales for transport and sale.	06/01/1981	FGPULPINGMOD-1
EU1227-1	Q41 Paper Machine – Pulp (from hardwood pulp, softwood pulp, coated broke, and uncoated broke storage) is combined with supplemental chemicals and additives to make various grades of paper.	06/01/1988	FGPULPINGMOD-1

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

EU0611-1 METHANOL STORAGE TANK
EMISSION UNIT CONDITIONS

DESCRIPTION

Methanol Storage Tank – The overflow capacity of the tank is 28,000 gallons.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methanol	0.54 tpy[1]	12-month rolling time period as determined at the end of each calendar month	EU0611-1	SC VI.1, SC VI.2	R 336.1224(1)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methanol	650,000 gallons per year transferred	12-month rolling time period as determined at the end of each calendar month	EU0611-1	SC VI.1	R 336.1205(1)(a) & (b), R 336.1224(1), R 336.1225

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not fill EU0611-1 at a rate faster than 200 gallons per minute.[1] (**R 336.1224(1), R 336.1225)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record, in a satisfactory manner acceptable to the AQD District Supervisor, the amount of methanol transferred into EU0611-1 on a monthly and 12-month rolling time period. The permittee shall keep all records on file and make them available to the Department upon request.[1] **(R 336.1205(1)(a) & (b), R 336.1224(1), R 336.1225)**

2. The permittee shall calculate and record the amount of methanol emissions from EU0611-1 on a monthly and 12-month rolling time period basis. The permittee shall keep all records on file and make them available to the Department upon request.[1] **(R 336.1205(1)(a) & (b), R 336.1224(1), R 336.1225)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

Tank pressure may be released by a pressure/vacuum breaker safety valve, as needed. Pressure relief valve discharges through a goose-neck vent.

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV06-ST-007-002	4	22	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU0815-1 CHEMICAL RECOVERY FURNACE
EMISSION UNIT CONDITIONS

DESCRIPTION

CHEMICAL RECOVERY FURNACE is capable of burning black liquor solids, salt cake, and ESP hopper solids. The Recovery Furnace is also capable of firing natural gas and vent gases (containing TRS compounds) from the pulping process.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Electrostatic Precipitator (ESP) to control particulate emissions.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. H_2SO_4	9.06 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b)
2. TRS based on H_2S	5.0 ppmv on a dry basis, at 8% oxygen	12-hour block average	EU0815-1	SC VI.2, SC VI.3, SC VI.4	R 336.1224(1), R 336.1225, 40 CFR 60.283(a)(2), 40 CFR 52.21(j)(3)
3. TRS based on H_2S	12.15 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b)
4. H_2S	10.7 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b)
5. PM2.5	42.1 pph	Hourly	EU0815-1	SC V.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
6. PM2.5	184.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810
7. PM10	45.7 pph	Hourly	EU0815-1	SC V.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
8. PM10	200.2 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810
9. PM	0.044 gr/dscf at 8% oxygen	Hourly	EU0815-1	SC V.2, SC VI.1	40 CFR 63.862(a)(1)(i)
10. PM	48.6 pph	Hourly	EU0815-1	SC V.1, SC VI.1	R 336.1205(1)(a) & (b), R 336.1331, R 336.2810
11. PM	212.9 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810
12. SO_2	50 ppmv on a dry basis, at 8% oxygen	24-hour average	EU0815-1	SC VI.4	40 CFR 52.21(j)(3)
13. SO_2	110 pph	24-hour average	EU0815-1	SC VI.6	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 52.21(j)(3)
14. SO_2	25 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
15. NO_x	110 ppmv on a dry basis, at 8% oxygen	24-hour rolling average	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2810
16. NO_x	218 pph	24-hour rolling average	EU0815-1	SC VI.6	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
17. NO_x	890 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810
18. CO	380 ppmv on a dry basis at 8% oxygen	8-hour rolling average	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
19. CO	458 pph	8-hour rolling average	EU0815-1	SC VI.6	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
20. CO	425 ppmv on a dry basis, at 8% oxygen	3-hour rolling average	EU0815-1	SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
21. CO	512.2 pph	3-hour rolling average	EU0815-1	SC VI.6	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
22. CO	900 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810
23. VOC	43.96 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a), R 336.1702(c)
24. Lead	0.54 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a), R 336.2804, 40 CFR 52.21(d)
25. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	50 ppmv on a dry basis, at 8% oxygen	Hourly	EU0815-1	SC V.1	R 336.1702(c), 40 CFR 52.21(j)(3)
26. TGNMO measured as total methane	27.4 pph	Hourly	EU0815-1	SC V.1	R 336.1702(c), 40 CFR 52.21(j)(3)
27. GHG as CO_2e	210 lbs/MMBTU	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j)
28. GHG as CO_2e	972,722 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.5	R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j)

II. MATERIAL LIMIT(S)

1. The permittee shall not fire any fuels in EU0815-1 except for natural gas, virgin black liquor solids, salt cake or ESP hopper materials. **(R 336.1224, R 336.1225, R 336.1702(c))**

2. The natural gas fuel usage for EU0815-1 shall not exceed 793.55 million cubic feet per year based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(c))**

3. The permittee shall not fire virgin black liquor solids, salt cake or ESP hopper materials greater than 4.68 million pounds per operating day and 823,440 tons per year, based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(c))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The steam load from EU0815-1 while incinerating dilute vent gases (DVG) shall not be less than 100,000 pounds of steam per hour, unless otherwise demonstrated by the permittee to the satisfaction of the AQD. **(R336.1225, R 336.1910)**

2. The permittee shall not generate DVGs during startup unless the DVGs can be accepted to either EU0815-1 or EU1121-1, which has maintained a minimum steam load under stable conditions. **(R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1702(c))**

3. The permittee shall not operate EU0815-1 unless the smelt dissolving tank scrubber and mist eliminator are operating properly. Proper operation includes, but is not limited to, compliance with established operating parameters. **(R 336.1225, R 336.1301, R 336.1331(1)(c), R 336.1702(c), R 336.1910, 40 CFR Part 63 Subparts A and MM)**

4. The permittee shall not operate EU0815-1 on virgin black liquor solids, salt cake, and/or ESP hopper materials, including during startup and shutdown, unless the ESP is operating properly. **(R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

5. The period of startup or shutdown is defined as the period when the permittee commences the process of continuously burning black liquor solids in EU0815-1 or begins the process of discontinuing the continuous burning of black liquor solids, respectively, and does not include any period when the permittee is combusting only natural gas in EU0815-1. The periods of startup or shutdown shall not exceed 12 hours per occurrence. **(R 336.1205, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

6. The permittee shall operate and maintain EU0815-1, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including startup, shutdown, and malfunction. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c), R 336.2803, R 336.2804, R 336.2810)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0815-1 unless the ESP is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1301, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days of achieving the maximum production rate, but not later than 180 days after commencement of initial startup of EU0815-1, the permittee shall verify PM, PM10, PM2.5, and TGNMO emission rates by testing at owner's expense, in accordance with Department requirements. Thereafter, performance stack testing shall be once every five years from the last test. Testing shall be performed using an approved USEPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60 Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10	40 CFR Part 51, Appendix M
PM2.5	40 CFR Part 51, Appendix M
Total Gaseous Nonmethane Organics (TGNMO)	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004)**

2. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. Subsequent periodic tests

must be conducted within 5 years following the previous performance test. Notification of performance tests shall be submitted at least 60 days in advance to the Administrator along with a site-specific test plan if requested. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through EPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Continuous Opacity Monitoring
   a) The permittee shall utilize COM-recorded opacity as an indicator of the proper operation of the ESP. The indicator range of opacity defining proper function of the ESP is 20%. Six-minute average values shall be based on 36 or more equally spaced instantaneous opacity measurements per six-minute period. An excursion is a departure from the indicator range of 20% opacity. Opacity shall be determined at the exit of the main stack using a combiner equation acceptable to the AQD. **(R 336.1301, R 336.2810)**
   b) The permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system to measure opacity in accordance with the procedures in 40 CFR 63.6(h) and 40 CFR 63.8. Opacity shall be determined at the exhaust of the recovery furnace to the main stack. **(40 CFR 63.6(h), 40 CFR 63.8)**
   c) The permittee shall maintain opacity at or below 35% except for 2% of the time in any semiannual period. **(40 CFR Part 63, Subpart MM)**
   d) The permittee shall implement corrective action when the average of ten consecutive 6-minute averages results in a measurement greater than 20% opacity. **(40 CFR 63.864(k)(2)(i))**
   e) The permittee shall record opacity emissions on a continuous basis, with certified instrumentation meeting the requirements of 40 CFR 60 Appendix B Performance Specification 1 and the applicable standards. The permittee shall perform quality assurance procedures according to 40 CFR 60 Appendix F, Procedure 3. Alternate procedures may be approved by the AQD. The permittee shall maintain and submit at the request of the AQD a Quality Assurance Plan for the continuous opacity monitoring system. The results of all quality assurance procedures shall be reported to the AQD in a format of the data assessment report (DAR) along with the quarterly excess emission reports (EER) and summary reports. **(40 CFR Part 63 Subparts A and MM, 40 CFR Part 60, Subparts A & BB, and Appendix B and Appendix F to Part 60)**
   f) Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(R 336.1910)**
   g) The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(R 336.1910)**
   h) The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(R 336.1910)**

2. Continuous Emission Monitoring (CEM) System and Recordkeeping.
   a) The permittee shall calibrate, monitor and record gaseous emissions of TRS on a continuous basis, with certified instrumentation, and in a manner acceptable to 40 CFR Part 60, Appendix B, Performance Specification Nos. 1 & 5. **(40 CFR 60.13, 40 CFR 60 Appendix B, Performance Specifications Nos. 1 & 5, 40 CFR 60.284)**

b) The permittee shall perform and report Quality Assurance Procedures of the CEMS and submit it to the AQD in a format of the data assessment report (DAR) along with the quarterly excess emission reports (EER) and summary reports. **(40 CFR Part 60, Subparts A & BB, and Appendix F)**

3. Process Monitoring System and Recordkeeping.
   a) The permittee shall comply with the monitoring system and recordkeeping as required by 40 CFR 60.284. **(40 CFR 60.284)**

4. Other Monitoring and/or Recordkeeping.
   a) The permittee shall maintain records of Particulate Matter and TRS emissions. **(40 CFR Part 60, Subpart A; 40 CFR 60.284)**
   b) Compliance with the concentration limits (ppmv) of SO_2, NOx, CO, and TRS shall be determined using CEMS located downstream of the ESP and in accordance with the procedures described in 40 CFR Part 60, Subpart BB, Section 60.284 and 40 CFR Part 60, Appendix B and the applicable Performance Specifications (PS) 2 through 5. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21, 40 CFR 60.284, 40 CFR 60.285)**
   c) The permittee shall monitor and record, in a satisfactory manner, the amount of fuel combusted daily and monthly from EU0815-1 and calculate the annual capacity factor for natural gas as determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. **(R 336.1205(1)(a) & (b), 40 CFR 60.49b(d)(1))**
   d) The permittee shall install, calibrate, maintain, and operate, in a satisfactory manner, a device to monitor and record black liquor solid (BLS) usage rate from EU0815-1, on a daily basis. **(R 336.1205(1)(a) & (b), R 336.2810)**
   e) Records of the data and calculations used to determine compliance with the emission limits of NOx, CO, and SO_2 as required in SC V.3. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d), (j))**

   The permittee shall keep all records on file at the facility and make them available to the Department upon request.

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period emission calculation records for EU0815-1, for H_2SO_4, TRS, H_2S, PM2.5, PM10, PM, SO_2, NO_x, CO, VOC, lead, and CO_2e, as required by SC I.1, I.3, I.4, I.6, I.8, I.11, I.14, I.17, I.22, I.23, I.24, I.27, and I.28. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810)**

6. The permittee shall calculate and keep pound per hour (pph) emission rates of SO_2, NOx, and CO for EU0815-1, once every five years from the date of the last performance test. The permittee shall use the flow rate from the most recent stack test for particulate or TGNMO; and the concentration (in ppm) of each pollutant, measured from a certified CEMs, for the applicable averaging periods to calculate the pph emission rates. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.12810)**

7. The permittee shall maintain a record of all fuels including natural gas, virgin black liquor solids, salt cake and ESP hopper materials fired in EU0815-1 on a monthly and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(c))**

8. The permittee shall maintain records of the startup and shutdown periods for EU0815-1, including dates, starting time, and ending time of such periods. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

9. The permittee shall monitor and record the total hourly, daily and annual EU0815-1 feed rates of black liquor solids which includes the virgin black liquor solids, salt cake, and ESP hoppers materials; the hourly steam load and natural gas usage of EU0815-1; the voltage and amperage supplied to all the fields and chambers of EU0815-1's ESP; and the time periods of one chamber operation of the ESP on a continuous basis in a manner and with instrumentation acceptable to the AQD. The permittee shall keep all records on file at the

facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301(1)(c), R 336.1331(1)(c), R 336.1910, 40 CFR 52.21, R 336.2810)**

10. The permittee shall keep records, as applicable, specified in 40 CFR 63.866(b)-(d) in addition to the applicable recordkeeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

VII. REPORTING

1. The permittee shall submit any performance test reports, including RATA reports, to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

2. The permittee shall submit the notifications and reports as specified in the applicable sections of 40 CFR Part 63, Subpart MM and A. Semiannual excess emissions reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CRR 63.867, 40 CFR 63.9, 40 CFR 63.10)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV08-ST-004-001	168	299	R 336.1225, R 336.2803 R 336.2804

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM: National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB, New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

3. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart Db: New Source Performance Standards for Industrial, Commercial, Institutional Steam Generating Units. **(40 CFR Part 60, Subpart Db)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU0816-1 SMELT DISSOLVING TANK
EMISSION UNIT CONDITIONS

DESCRIPTION

SMELT DISSOLVING TANK – Inorganics from the chemical recovery furnace and precipitator are mixed with weak wash to form green liquor. Emissions are controlled by a wet scrubber.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Dynamic scrubber to control total reduced sulfur (TRS), hydrogen sulfide, and total gaseous nonmethane organics (TGNMO) emissions.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. H_2S	3.63 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b)
2. TRS based on H_2S	0.0168 lb/ton BLS on a dry weight as fired basis	Hourly	EU0816-1	SC V.1	40 CFR 52.21(j)(3)
3. TRS based on H_2S	0.033 lb/ton BLS on a dry weight as fired basis	3-hour average	EU0816-1	SC V.1	40 CFR 60.283(a)(4)
4. TRS	5.21 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b)
5. PM **	0.107 lb/ton BLS on a dry weight as fired basis	Hourly	EU0816-1	SC V.1 SC VI.3	40 CFR 52.21(j)(3)
6. PM **	8.5 pph	Hourly	EU0816-1	SC V.1 SC VI.3	40 CFR 52.21(j)(3)
7. PM	0.2 lb/ton BLS, on a dry weight as fired basis	Hourly	EU0816-1	SC V.2	40 CFR 63.862(a)(1)(i)(B), 40 CFR 60.282(a)(2)
8. PM	28.16 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b)
9. PM10 **	0.107 lb/ton BLS on a dry weight as fired basis	Hourly	EU0816-1	SC V.1 SC VI.3	40 CFR 52.21(j)(3)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
10. PM10 **	8.5 pph	Hourly	EU0816-1	SC V.1 SC VI.3	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 52.21(j)(3)
11. PM10	26.31 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
12. PM2.5	22.5 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
13. SO_2 **	0.016 lb/ton BLS on a dry weight as fired basis	Hourly	EU0816-1	SC V.1 SC VI.2	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
14. SO_2 **	1.27 pph	Hourly	EU0816-1	SC V.1 SC VI.2	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
15. SO_2	5.56 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
16. VOC	14.61 tpy	12-month rolling time period as determined at the end of each calendar month	EU0815-1	SC VI.7	R 336.1205(1)(a) & (b)
17. CO	5.29 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b), R 336.2804, 40 CFR 52.21(d)
18. NO_x	11.29 tpy	12-month rolling time period as determined at the end of each calendar month	EU0816-1	SC VI.7	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
19. TGNMO measured as methane	200 ppmv of exhaust gases, on a dry basis	Hourly	EU0816-1	SC V.1	R 336.1702(a), 40 CFR 52.21(j)(3)
20. TGNMO measured as methane	6.5 pph	Hourly	EU0816-1	SC V.1	R 336.1702(a), 40 CFR 52.21(j)(3)

BLS = Black liquor solids
**Limit is based on a maximum of 4.68 MM lbs per day of virgin black liquor solids, salt cake and/or ESP hoppers materials.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0816-1 unless the scrubber is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.2810, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify H_2S, TRS, PM, PM10, SO_2, and TGNMO emission rates from EU0816-1, by testing at owner's expense, in accordance with the Department requirements, once every five years from the last test. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10	40 CFR Part 51, Appendix M
SO_2	40 CFR Part 60, Appendix A
H_2S	40 CFR Part 60, Appendix A
Total Gaseous Nonmethane Organics (TGNMO)	40 CFR Part 60, Appendix A
Total Reduced Sulfurs (TRS)	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. The TRS emission testing shall be conducted when incinerating DVGs in the chemical recovery furnace. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.7, 40 CFR 60.8 and Appendix A)**

2. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. Subsequent periodic tests must be conducted within 5 years following the previous performance test. Notification of performance tests shall be submitted at least 60 days in advance to the Administrator along with a site-specific test plan if requested. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through USEPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. Beginning October 11, 2019, the notification of compliance status must be submitted to the USEPA via CEDRI. **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to measure fan amperage and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in 40 CFR 63.8. **(40 CFR 63.864(e)(10), 40 CFR 60.13(A), 40 CFR 63.8(b)(1))**

2. The permittee shall establish scrubber operating ranges for fan amperage and scrubbing liquid flow rate as specified in 40 CFR 63.864(j) and 40 CFR 63.865. The minimum scrubbing liquid flow rate is the rate established during the most recent performance test for particulate matter. **(40 CFR 63.864(j))**

3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semi-annual period. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iv) and 40 CFR 63.864(k)(3))**

4. An excursion is when any 3-hour average parameter value is outside the minimum scrubber liquid flow rate established during the most recent performance test for particulate matter as provided in 40 CFR 63.864(j). The permittee shall implement corrective action upon detection of an excursion. **(40 CFR 63.864(k)(1)(ii)))**

5. The permittee shall conduct CMS inspections, evaluations, and quality control. **(40 CFR 63.864(f) and 40 CFR 63.8(d)-(e))**

6. The permittee shall maintain the records, as applicable, specified in 40 CFR 63.866(b)-(d) in addition to the applicable record-keeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period H_2S, TRS, PM, PM10, PM2.5, SO_2, VOC, CO and NO_x emission calculation records for EU0816-1, as required by SC I.1, I.4, I.8, I.11, I.12, I.15, I.16, I.17, and I.18. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b))**

8. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(R 336.1910, R 336.1912)**

9. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(R 336.1910)**

10. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(R 336.1910, R 336.1912)**

11. The permittee shall monitor and record the time(s) when the collector bypass is opened and closed.[1] **(R 336.1901)**

VII. REPORTING

1. The permittee shall submit the notifications and reports as specified in the applicable sections of 40 CFR 63 Subparts MM and A. Beginning October 11, 2019, semiannual excess emissions reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CFR 63.867, 40 CFR 63.9, 40 CFR 63.10)**

2. The permittee shall submit any performance test reports, including RATA reports, to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV08-ST-005-001	48	186	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM: National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semi chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB: New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU0917-1 LIME KILN
EMISSION UNIT CONDITIONS

DESCRIPTION

LIME KILN – Lime mud from the causticizing system is converted to lime in a rotary kiln. Emissions are controlled by a wet scrubber.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Venturi wet scrubber to control particulate, total reduced sulfur (TRS), hydrogen sulfide, methanol, and total gaseous nonmethane organics (TGNMO) emissions.

Low NOx burner to control NOx emissions.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. TRS based on H_2S	8.0 ppmv on a dry basis, at 10% oxygen	12-hour block average	EU0917-1	SC VI.1	R 336.1224, R 336.1225, 40 CFR 60.283(a)(5), 40 CFR 52.21(j)(3)
2. Carbon Monoxide (CO)	0.64 lb/MMBTU heat input when firing natural gas and/or No. 6 fuel oil	Hourly	EU0917-1	SC V.1	R 336.2804, 40 CFR 52.21(d)
3. Nitrogen Oxides (NOx)	0.30 lb/MMBTU heat input when firing natural gas and/or No. 6 fuel oil	Hourly	EU0917-1	SC V.1	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
4. NOx	29 pph	Hourly	EU0917-1	SC V.1	R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
5. PM	0.064 gr/dscf at 10% oxygen	Hourly	EU0917-1	SC V.3, SC VI.2	40 CFR 60.282(a)(3)(i), 40 CFR 63.862(a)(1)(i)
6. PM	16.9 pph	Hourly	EU0917-1	SC V.1, SC VI.2	40 CFR 52.21(j)(3)
7. PM	9.4 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804
8. PM	41.1 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
9. PM10	9.7 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
10. PM10	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
11. PM2.5	9.7 pph	Hourly	EU0917-1	SC V.1, SC VI.2	R 336.2803, R 336.2804
12. PM2.5	42.3 tpy	12-month rolling time period as determined at the end of each calendar month	EU0917-1	SC VI.7	R 336.1205(1)(a) & (b)
13. SO_2	40 pph	Hourly	EU0917-1	SC V.2	R 336.2803, R 336.2804, 40 CFR 52.21(j)(3)
14. SO_2	1.7 lbs/MMBTU of heat input (Applies when burning fuel oil)	Hourly	EU0917-1	SC V.2, SC VI.6	R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)
15. Total Gaseous Nonmethane Organics (TGNMO) measured as total methane	68 ppmv on a dry basis, at 10% oxygen	Hourly	EU0917-1	SC V.1	R 336.1702(a)
16. TGNMO measured as total methane	5.0 pph	Hourly	EU0917-1	SC V.1	R 336.1702(a)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semiannual period, with the exception of pressure drop during periods of startup and shutdown. The permittee shall implement a corrective action when any 3-hour average parameter value is outside the range of values established as provided in 40 CFR 63.864(j). No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(1)(ii), 40 CFR 63.864(k)(2), 40 CFR 63.864(k)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU0917-1 unless the wet scrubber is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910, 40 CFR 52.21(j)(3), R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall verify Methanol, CO, NOx, PM, PM10, PM2.5, and TGNMO emission rates from EU0917-1, by testing at owner's expense, in accordance with the Department requirements, once every five years from the last test. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
CO	40 CFR Part 60, Appendix A
NOx	40 CFR Part 60, Appendix A
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM10	40 CFR Part 51, Appendix M
PM2.5	40 CFR Part 51, Appendix M
TGNMO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. The TRS emission testing shall be conducted when incinerating DVGs in the chemical recovery furnace. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR Part 51 and Appendix M, 40 CFR Part 60 and Appendix A)**

2. Upon request of the AQD District Supervisor, the permittee shall verify SO_2 emission rates from EU0917-1, by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
SO_2	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.7, 40 CFR 60.8 and Appendix A)**

3. The permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. Subsequent periodic tests must be conducted within 5 years following the previous performance test. Test results must be submitted within 60 days of test completion to the USEPA via CEDRI in a format generated through USEPA's ERT (electronic reporting tool), or consistent with the XML schema listed on USEPA's ERT website. A notification of compliance status must be submitted within 60 days of performance test completion. Beginning October 11, 2019, the notification of compliance status must be submitted to the USEPA via CEDRI. **(40 CFR 63.7, 40 CFR 63.865, 40 CFR 63.867)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The TRS concentration limit shall be determined using a CEMS located downstream of the scrubber and in accordance with the procedures specified in 40 CFR 60.284, 40 CFR Part 60, Appendix F and Performance Specifications 5 & 3. **(40 CFR 60.284, 40 CFR 60 Appendix F and Appendix B PS 5 & 3)**

2. The permittee shall install, calibrate, maintain, monitor and operate a continuous monitoring system to measure and record pressure drop across the scrubber and scrubber liquid flow rate at least once every

successive 15-minute period using the procedure in (40 CFR 63.864 (e)(10), 40 CFR 60.13(a). **(40 CFR 63.8, 40 CFR 63.864 (e)(10))**

3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j) except for up to five 3-hour average periods in a semi-annual period. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iv), 40 CFR 63.864(k)(3))**

4. The permittee shall maintain and implement CMS data quality assurance procedures consistent with the requirements in 40 CFR 63.8(d)(1) and (2). **(40 CFR 63.864(f), 40 CFR 63.8(d)(1)-(2))**

5. The permittee shall maintain records, as applicable, specified in 40CFR 63.866(b) - (d) in addition to the applicable record keeping requirements of 40 CFR 63.10. **(40 CFR 63.866(b)-(d), 40 CFR 63.10)**

6. The permittee shall maintain purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing or any other records adequate to demonstrate compliance with the emission limit in SC I.14. **(R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

7. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period PM2.5, PM10, and PM emission calculation records for EU0917-1, as required by SC I.8, I.10, and I.12. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(R 336.1910, R 336.1912)**

VII. REPORTING

1. The permittee shall submit NESHAP semiannual excess emissions reports as specified in 40 CFR Part 63, Subparts MM and A. Semiannual reports must be submitted electronically via CEDRI if forms are available. If CEDRI forms are not available, electronic reports must be submitted within one year of availability. **(40 CFR 63.867(c), 40 CFR 63.10(e)(3)(v))**

2. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10. **(40 CFR 63.867(a), 40 CFR 63.10(d))**

3. The permittee shall submit any performance test reports {including RATA reports} to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV09-ST-005-001	60	185	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart MM - National Emission Standards for Hazardous Air Pollutants for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand–Alone Semi-chemical Pulp Mills. **(40 CFR Part 63, Subpart MM)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB: New Source Performance Standards for Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU1882-1 Q40 PULP DRYER
EMISSION UNIT CONDITIONS

DESCRIPTION

Q40 PULP DRYER – Pulp produced onsite is dewatered, pressed, dried, and cut into bales for transport and sale.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	24.1 tpy	12-month rolling time period as determined at the end of each calendar month	EU1882-1	SC V.1, SC VI.1, SC VI.3	R 336.1205(1)(a) & (b), R 336.1702(a)
2. PM	3.25 tpy*	12-month rolling time period as determined at the end of each calendar month	EU1882-1	SC VI.1, SC VI.2	R 336.1205(1)(a) & (b)
* Based on an emission factor of 0.0022 lb PM/ton pulp.					

II. MATERIAL LIMIT(S)

1. The permittee shall not dry more than dry more than 325,000 tons per year, based on a 12-month rolling time period. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall determine the methanol concentration in the EU1882-1 white-water weekly, at minimum, during weeks of Pulp Dryer operation. Methanol concentration shall be determined by NCASI Method DI/MEOH-91.03 or an alternative method approved by the AQD District Supervisor. Weekly white-water sample methanol results will be averaged and used to calculate a monthly VOC emission factor. Monthly VOC tons will be calculated using Pulp Dryer production rates and the VOC emission factor. Monthly VOC emissions will be used to verify compliance with the 12-month rolling VOC tons per year limit. If at any time the 12-month rolling VOC emissions exceed 24.1 tons, the permittee shall increase the white-water sampling and analysis frequency to a minimum of 3 samples per week (during weeks of pulp dryer operation) and shall review the operating conditions of the bleaching system along with keeping records of corrective actions

taken. Once the VOC tons are maintained below the compliance limit for one month, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the daily and monthly tons of pulp dried from EU1882-1. **(R 336.1205(1)(a) & (b))**

2. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period PM emissions, using industry emission factors and monthly production from EU1882-1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.2803, R 336.2804)**

3. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period VOC emissions for EU1882-1. The calculations shall utilize, at a minimum, weekly white-water sampling data collected in SC V.1 and the monthly production from the pulp dryer. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV18-ST-019-001	48	88	R 336.1225, R 336.2803, R 336.2804
2. SV18-ST-019-003	48	88	R 336.1225, R 336.2803, R 336.2804
3. SV18-ST-017-001	30	83	R 336.1225, R 336.2803, R 336.2804
4. SV18-ST-004-001	36	90	R 336.1225, R 336.2803, R 336.2804
5. SV18-ST-011-001	48	91	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU1227-1 Q41-PAPER MACHINE
EMISSION UNIT CONDITIONS

DESCRIPTION

Q41 PAPER MACHINE – Pulp (from hardwood pulp, softwood pulp, coated broke, and uncoated broke storage) is combined with supplemental chemicals and additives to make various grades of paper.

Flexible Group ID: FGPULPINGMOD1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	42.71 tpy	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC V.1, SC VI.3	R 336.1205(1)(a) & (b), R 336.1702(c)
2. PM	13.14 tpy	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	R 336.1205(1)(a) & (b), R 336.2810
3. PM10	126 lb/day**	24-Hour average	EU1227-1	SC II.1, SC VI.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
4. PM10	23.0 tpy	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	R 336.1205(1)(a) & (b), R 336.2810
5. PM2.5	108 lb/day***	24-Hour average	EU1227-1	SC II.1, SC VI.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
6. PM2.5	19.71 tpy***	12-month rolling time period as determined at the end of each calendar month	EU1227-1	SC VI.2	R 336.1205(1)(a) & (b), R 336.2810

*PM emissions based on an emission rate of 0.04 lbs PM per ton Air Dry Tons Finished Paper (ADTFP) and daily production rate of ADTFP per day.
**PM10 emissions based on an emission rate of 0.07 lbs PM10 per ton ADTFP and daily production rate of ADTFP per day.
***PM2.5 emissions based on an emission rate of 0.06 lbs PM2.5 per ton ADTFP and daily production rate of ADTFP per day.

II. MATERIAL LIMIT(S)

1. The permittee shall not produce more than 1,800 ADTFP per day based on a 24-hour time period as determined at the end of each calendar day. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c), R 336.2810)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Within 180 days after trial operation of EU1227-1, the permittee shall submit a plan to the AQD District Supervisor for approval, that describes how emissions will be minimized at all times. The plan shall incorporate good operating practices and shall identify the routine and periodic inspection and maintenance activities to ensure optimal operation related to the minimization of particulate emissions. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall determine the methanol concentration in the EU1227-1 white-water weekly, at minimum, during weeks of Paper Machine operation. Methanol concentration shall be determined by NCASI Method DI/MEOH-91.03 or an alternative method approved by the AQD District Supervisor. Weekly white-water sample methanol results will be averaged and used to calculate a monthly VOC emission factor. Monthly VOC tons will be calculated using Paper Machine production rates and the VOC emission factor. Monthly VOC emissions will be used to verify compliance with the 12-month rolling VOC tons per year limit. If at any time the 12-month rolling VOC emissions exceed 42.71 tons, the permittee shall increase the white-water sampling and analysis frequency to a minimum of 3 samples per week (during weeks of paper machine operation) and shall review the operating conditions of the bleaching system along with keeping records of corrective actions taken. Once the VOC tons are maintained below the compliance limit for one month, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(c))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the daily ADTFP, from EU1227-1, as determined at the end of each calendar day. **(R 336.1205, R 336.1225, R 336.1702(c), R 336.2810)**

2. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period PM, PM10, and PM2.5 emissions, using verified emission factors as approved by the AQD district supervisor, and the monthly paper production rate from EU1227-1. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.2803, R 336.2804, R 336.2810)**

3. The permittee shall calculate and record, in a satisfactory manner, monthly and 12-month rolling time period VOC emissions for EU1227-1. The calculations shall utilize, at a minimum, weekly white-water sampling data collected in SC V.1, and monthly paper production. All records shall be kept on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(c))**

4. The permittee shall keep daily records of all inspections and maintenance activities for EU1227-1. All records shall be kept on file at the facility and made available to the Department upon request.

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV12-ST-085-001	60	90	R 336.1225, R 336.2803, R 336.2804
2. SV12-ST-085-002	72	89	R 336.1225, R 336.2803, R 336.2804
3. SV12-ST-085-003	30	88	R 336.1225, R 336.2803, R 336.2804
4. SV12-ST-086-001	12	91	R 336.1225, R 336.2803, R 336.2804
5. SV12-ST-092-001	78	90	R 336.1225, R 336.2803, R 336.2804
6. SV12-ST-092-002	78	90	R 336.1225, R 336.2803, R 336.2804
7. SV12-ST-093-001	60	95	R 336.1225, R 336.2803, R 336.2804
8. SV12-ST-094-001	24	92	R 336.1225, R 336.2803, R 336.2804
9. SV12-ST-096-001	30	92	R 336.1225, R 336.2803, R 336.2804
10. SV12-ST-097-001	28	91	R 336.1225, R 336.2803, R 336.2804
11. SV12-ST-098-001	25	95	R 336.1225, R 336.2803, R 336.2804
12. SV12-ST-099-001	32	91	R 336.1225, R 336.2803, R 336.2804
13. SV12-ST-100-001	32	91	R 336.1225, R 336.2803, R 336.2804
14. SV12-ST-105-001	54	90	R 336.1225, R 336.2803, R 336.2804
15. SV12-ST-106-001	54	90	R 336.1225, R 336.2803, R 336.2804
16. SV12-ST-117-001	30	95	R 336.1225, R 336.2803, R 336.2804
17. SV12-ST-118-001	30	95	R 336.1225, R 336.2803, R 336.2804
18. SV12-ST-119-002	30	95	R 336.1225, R 336.2803, R 336.2804
19. SV12-ST-120-002	30	95	R 336.1225, R 336.2803, R 336.2804
20. SV12-ST-121-003	30	95	R 336.1225, R 336.2803, R 336.2804
21. SV12-ST-122-003	30	95	R 336.1225, R 336.2803, R 336.2804

IX. OTHER REQUIREMENT(S)

NA

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGBBKRAFT-1	KRAFT MILL SUBPART BB SYSTEMS flexible group regulated under CFR 40 Part 60, Subpart BB (40 CFR Part 60, Subpart BB – Standards of Performance for Kraft Pulp Mills)	EU0203-1 EU0204-1 EU0205-1 EU0368-1 EU0765-1 EU0766-1 EU0767-1
FGPULPINGMOD-1	Modification to increase pulping and black liquor solids firing rates and paper machine modifications.	EU0815-1 EU0816-1 EU0917-1 EU1121-1 EU1227-1 EU0407-1 FGBLEACH-1 EU1882-1 EU0610-1 EU0611-1 EU0819-1

FGBBKRAFT-1 KRAFT MILL SUBPART BB SYSTEMS FLEXIBLE GROUP CONDITIONS

DESCRIPTION

KRAFT MILL SUBPART BB SYSTEMS flexible group regulated under CFR 40 Part 60, Subpart BB, applicable to the following associated emission units:

Emission Units:

- EU0203-1 (Chip Bin) – The Chip Bin serves as the feed point for the Digester System
- EU0204-1 (Digester System) – Chips that have been conveyed to the chip bin are metered into the digester. In the digester, chips and cooking additives are combined with steam to produce pulp
- EU0205-1 (Digester Blow Tank) – Pulp from the digester process is transferred to this tank prior to processing in the brown stock washing system
- EU0368-1 (Brown Stock Washers) – Pulp from the digester system is transferred to the brown stock washers where the pulp is screened and cleaned using a water solution
- EU0765-1 (Evaporator System) – Liquor from the digester and pulp washer systems are processed in the evaporator system to increase solids content of the liquor
- EU0766-1 (Hotwell) – This unit is part of the evaporator and receives condensate from the evaporator surface condenser
- EU0767-1 (Condensate Stripper) - Condensate from the evaporator system is steam–stripped to remove organics

POLLUTION CONTROL EQUIPMENT

Vent gasses from EU0204-1, EU0765-1, EU0766-1 and EU0767-1 are collected in the CVG System (FG2334-1) and incinerated in the Lime Kiln or Waste Fuel Boiler. Vent gasses from the EU0203-1, EU0205-1 and EU0368-1 are collected in the DVG System (FG2335-1) and incinerated in the Waste Fuel Boiler or Recovery Furnace.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Total Reduced Sulfur (TRS)	5 ppmv on a dry basis, at 10% oxygen [(a)]	Hourly	EU0203-1 EU0204-1 EU0205-1 EU0765-1 EU0766-1 EU0767-1	See FG2334-1 SC VI.3a-c	40 CFR 60.283 (a)(1)(i) & (iii)
			EU 0368-1	See FG 2335-1 SC VI.1, SC VI.2a-f	R 336.1201(3) 40 CFR 60.283 (a)(1)(ii) & (iii)
[(a)] This limit applies unless the gases are combusted in either the Lime Kiln (EU0917-1), Waste Fuel Boiler (EU1121-1), or Recovery Furnace (EU1121-1).					

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Pulp	1786 tons/day	24-hour average	EU0204-1	SC VI.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804
2. Pulp	638,970 tpy	12-month rolling time period as determined at the end of each calendar month	EU0204-1	SC VI.1	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall route the exhaust gases from the Condensate Stripper, the Digester System, Digester Blow Tank, and Evaporator System to either the Lime Kiln, Waste Fuel Boiler, or Recovery Furnace for incineration. **(R 336.1224, R 336.1225, R 336.1901, R 336.1910, 40 CFR 52.21(j)(3), 40 CFR 60.284, 40 CFR 60.283(a)(1)(i), (ii) & (iii))**

2. The permittee shall not vent the digester low pressure feeder except to the chip bin. **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the tons of pulp produced in EU0204-1 on a daily, monthly, and 12-month rolling time period basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 60, Subpart BB – Standards of Performance for New Stationary Sources: Kraft Pulp Mills. **(40 CFR Part 60, Subpart BB)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGPULPINGMOD-1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Emission units affected by the NSR reform rules for using baseline actual emissions and future projected actual emissions to provide a determination of project-related emissions increases for the modified and affected emission units.

Emission Units:

- EU0815-1 Chemical Recovery Furnace
- EU0816-1 Smelt Dissolving Tank
- EU0917-1 Lime Kiln
- EU1121-1 Waste Fuel Boiler
- EU1227-1 Paper Machine
- EU1227-1 Paper Machine Coater Dryers
- EU1882-1 Pulp Dryer
- EU0407-1 White Liquor Oxidation System
- FGBLEACH-1 Bleach and Extraction Stages
- EU0610-1 ClO_2 Generating Plant
- EU0611-1 Methanol Storage Tank
- EU0819-1 Slaker

POLLUTION CONTROL EQUIPMENT

EU0815-1 control equipment includes an ESP. EU0816-1 control equipment includes a wet scrubber. EU 0917-1 control equipment includes a wet scrubber. EU1121-1 control equipment includes a multicyclone collector, ESP, and over-fired air system. FGBLEACH-1 control equipment includes two wet scrubbers. EU0407-1 control equipment includes a demister. EU0610-1 control equipment includes wet scrubbers. EU0819-1 includes a wet scrubber.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the annual emissions of SO_2 and VOCs described in Appendix 1, in tons per calendar year. Calculations and record keeping shall begin the month in which regular operations of EU0815-1 commence and shall continue for ten (10) years. **(R 336.2818)**

VII. REPORTING

1. The permittee shall submit records of the annual emissions of SO_2 and VOCs from FGPULPINGMOD-1 described in Appendix 1, in tons per calendar year, to the AQD Permit Section Supervisor within 60 days following the end of each reporting year if both the following occur:

   a) The calendar year actual emission of any pollutant exceeding the baseline actual emissions (BAE) by a significant amount, and

   b) The calendar year actual emissions differ from the pre-construction projection.

   The report shall contain the name, address, and telephone number of the facility (major stationary source); the annual emissions as calculated pursuant to SC VI.1, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2818(3)(f))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

APPENDIX 1 - Recordkeeping Provisions for PSD Source Using Actual to Projected-Actual Applicability Test

All information in this Appendix shall be maintained pursuant to R 336.2818(3)(f) for ten years after the emission unit(s) identified in Table C resume normal operations and shall be provided to the Department for the first year and thereafter made available to the Department upon request.

A. Project Description:

The Quinnesec Mill, a bleached Kraft pulp and paper mill, is seeking a PSD permit to increase the daily and annual digester pulping limits and recovery furnace black liquor solids firing limits. The project involves both physical modifications and increased process throughput for affected emission units.

B. Applicability Test Description:

"Actual to Projected Actual" test was used to determine project-related emissions increase for modified and affected emission units.

- Modified emission units: EU0815-1 (Recovery Furnace), EU1227-1 (Paper Machine)
- Affected emission units: EU0816-1 (Smelt Dissolving Tank), EU0917-1 (Lime kiln), EU1121-1 (Waste fuel boiler), EU1227-1 (Paper Machine Coater Dryers), EU1882-1 (Pulp Dryer), EU0407-1 (White Liquor Oxidation System), EU0610-1 (ClO_2 Generating Plant), EU0611-1 (Methanol Storage Tank), EU0819-1 (slaker), FGBLEACH-1 (Bleach and Extraction Stages)

C. FGPULPINGMOD-1 Emission Increases:

Table C.1

		SO_2 Emissions (tpy)				
Emission Unit/Flexible Group ID	**Pollutant**	**Baseline Actual**	**Projected Actual**	**Excluded**	**Increase / Decrease (+/-)**	**Reason for Exclusion**
EU0815-1	SO_2	4.63	25.0	0.05	20.3	Emissions were annualized during the respective baseline period using a three-month sustained BLS throughput rate, from EU0815-1.
EU0816-1	SO_2	2.24	2.47	0.03	0.20	
EU0917-1	SO_2	0.36	0.38	0.03	0	
EU1121-1	SO_2	246.89	911.08	661.98	2.21	
EU1227-1	SO_2	0.04	0.06	0	0.02	
Total		254.16	938.99	662.1	**22.73**	

Table C.2

		VOC Emissions (tpy)				
Emission Unit/Flexible Group ID	**Pollutant**	**Baseline Actual**	**Projected Actual**	**Excluded**	**Increase / Decrease (+/-)**	**Reason for Exclusion**
EU0407-1	VOC	0.73	0.79	0.07	0	Emissions were annualized during the respective baseline period using a three-month sustained BLS throughput rate, from EU0815-1.
FGBLEACH-1	VOC	7.41	8.89	0.33	1.15	
EU1227-1 (Paper Machine)	VOC	8.47	42.71	0	34.24	
EU1227-1 (Coater Dryers)	VOC	0.38	0.57	0.13	0.06	
EU1882-1	VOC	19.40	24.05	2.35	2.3	
EU0610-1	VOC	0.04	0.05	0.00492	0.0051	
EU0611-1	VOC	0.23	0.29	0.02	0	
EU0815-1	VOC	15.08	16.63	0.17	1.38	
EU0816-1	VOC	4.18	4.61	0.05	0.38	
EU0917-1	VOC	7.63	8.20	0.69	-0.12	
EU0819-1	VOC	0.66	0.70	0.06	-0.02	
EU1121-1	VOC	5.25	6.70	1.37	0.08	
Total		69.46	114.19	5.24	**39.48**	

BILLERUD

Billerud Quinnesec LLC
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Paula LaFleur
Environmental Engineer

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August 24, 2023

EGLE, Air Quality Division
Grand Rapids District Office
350 Ottawa Avenue NW, Unit 10
Grand Rapids, MI 49503

Subject: Rule 216 Administrative Amendment to MI-ROP-B7192-2020b

Please find attached the application for an administrative amendment to Billerud Quinnesec LLC's ROP, MI-ROP-B7192-2020b. The purpose of the administrative amendment is to incorporate the conditions of PTI 99-20B into the ROP per the provisions of Rule 216(2).

It is understood, based upon a conversation with Caryn Owens on 8/22/23, that the terms of PTI 99-20B will be incorporated into the ROP during the next ROP renewal cycle.

Please let me know if you have any questions or need any additional information.

Sincerely,

Paula LaFleur
Environmental Engineer

Attachment – Rule 216 Amendment Application M-001 and C-001 forms

Electronic cc:
EGLE-ROP@michigan.gov
Caryn Owens – EGLE
Michael Conklin – EGLE

EGLE

Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division

RENEWABLE OPERATING PERMIT
M-001: RULE 215 CHANGE NOTIFICATION
RULE 216 AMENDMENT/MODIFICATION APPLICATION

This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, 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.

1. SRN B7192	2. ROP Number MI-ROP-B7192-2020b	3. County Dickinson
4. Stationary Source Name	Billerud Quinnesec LLC	
5. Location Address	W-6791 US Highway 2	6. City Quinnesec

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.*

- ☐ **Rule 215(1) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(2) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(3) Notification of change**. *Complete Items 8 – 11 and 14*
- ☐ **Rule 215(5) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment**. *Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☒ **Rule 216(2) Minor Modification**. *Complete Items 8 – 12 and 14*
- ☐ **Rule 216(3) Significant Modification**. *Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification**. *Complete Items 8 – 12 and 14*

8. Effective date of the change. (MM/DD/YYYY) *See detailed instructions.* 09/01/2023

9. Change in emissions? ☒ Yes ☐ No

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

Changes to the ROP include the revisions and new conditions as indicated in PTI 99-20B. These changes will be incorported into the ROP during the next ROP renewal of MI-ROP-B7192-2020b, which expires on June 11, 2025.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☒ Yes ☐ No

If Yes, enter the PTI Number(s) 99-20B ____ ____ ____ ____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☐ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.* **AI**

14. Contact Name	Telephone No.	E-mail Address
Paula LaFleur	906-779-3494	paula.lafleur@billerud.com

15. This submittal also updates the ROP renewal application submitted on ____/____/____ ☐ Yes ☒ N/A
(If yes, a mark-up of the affected pages of the ROP must be attached.)

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

For Assistance
Contact: 800-662-9278

www.michigan.gov/egle

EQP 5775 (Rev.04-2019)

General

EGLE Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

RENEWABLE OPERATING PERMIT APPLICATION
C-001: CERTIFICATION

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 provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type **C-001**	SRN B7192

Stationary Source Name Billerud Quinnesec LLC	
City Quinnesec	County Dickinson

SUBMITTAL CERTIFICATION INFORMATION

1. Type of Submittal *Check only one box.*

☐ Initial Application (Rule 210) ☒ Notification / Administrative Amendment / Modification (Rules 215/216)

☐ Renewal (Rule 210) ☐ Other, describe on AI-001

2. If this ROP has more than one Section, list the Section(s) that this Certification applies to 1

3. Submittal Media ☒ E-mail ☐ FTP ☐ Disk ☒ Paper

4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.

AI

CONTACT INFORMATION

Contact Name Paula LaFleur	Title Environmental Engineer
Phone number 906-779-3494	E-mail address paula.lafleur@billerud.com

This form must be signed and dated by a Responsible Official.

Responsible Official Name Dennis Pepich			Title Mill Manager	
Mailing address PO Box 211				
City Norway	State MI	ZIP Code 49870	County Dickinson	Country United States

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

Dennis L Pepich — Signature of Responsible Official

8/24/23 — Date

Billerud Quinnesce LLC
CAM Plan

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CAM Plan
Chip Screening Operations (EU0101-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Chip Screening Operations
Identification:	EU0101-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM ≤ 3 grains/dscf (reflects assumed control efficiency of 99% applied to controlled emission limit of 0.03 grains/dscf) equates to 2,277 tpy uncontrolled.
Controlled Emission Limit:	PM ≤ 0.03 gr/dscf , 5.2 lb/hr
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Carter Day/Donaldson

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Omega Differential Pressure Transmitter
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC), based on engineering analysis

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the manual recording of the delta pressure measurements.

QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Chip Production Operations. Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations in the chip screening building. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filters by compressed air and is reclaimed as fuel for the Waste Fuel Boiler.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.1 and 4.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source. Historical Method 9 inspections indicate VE is within limits.

Billerud Quinnesec LLC
CAM Plan
Chip Production Operations (EU0102-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Chip Production Operations
Identification:	EU0102-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	R 336.1331(1)(c)
Uncontrolled Emissions:	PM ≤ 0.06 lb/1000 lb exhaust gases equates to 18.82 tpy controlled, dry basis. With an assumed control efficiency of 99% applied to 18.82 uncontrolled emissions are greater than 100tpy
Controlled Emission Limit:	PM ≤ 0.06 lb/1000 lb exhaust gases, dry gas basis
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Johnson-March Corporation

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Dwyer Photohelic Differential Pressure Gauges
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC)

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the

	manual recording of the delta pressure measurements
QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Chip Production Operations. Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations from the chipper operations. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filter by compressed air and is reclaimed and as fuel for the Waste Fuel Boiler.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.5 and 10.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source. Historical Method 9 inspections indicate VE is within limits.

Billerud Quinnesec LLC
CAM Plan
Chemical Recovery Furnace (EU0815-1)
Electrostatic Precipitator (ESP) for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Chemical Recovery Furnace
Identification:	EU0815-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM <= 0.54 gr/dscf (reflects assumed control efficiency of 95% applied to controlled emission limit of 0.027 gr/dscf)
Controlled Emission Limit:	PM <= 48.6 lb/hr, PM-10 <= 45.7 lb/hr, PM-2.5 <=42.1 lb/hr
Monitoring Requirements:	Opacity as monitored by a continuous opacity monitor (COM).

Control Technology

High Efficiency Dry Bottom ESP, Manufactured by Research - Cottrell

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Opacity

B. Measurement Approach

Analytical Devices:	Manufacture: SICK, Model:T200
Monitoring Locations:	Measurement in the flue gas duct with opacity at the exit of the main stack calculated using the opacity combiner equation

C. Indicator Range

0-100 %

D. Performance Criteria

Data Representativeness:	The COMS continuously monitors and records opacity in the stack
Verification of Operational Status:	The opacity will continuously be monitored and recorded.

QA/QC Procedures:	The COMS will be operated and maintained in accordance with procedures outlined in the mill's ROP MI-ROP-B7192, EU0815, Monitoring/Recordkeeping VI.1.
Monitoring Frequency:	Continuous
Reporting Units:	% Opacity
Recording Process:	Continuously monitored and recorded
Data Requirements:	A comparison of COM readings taken during PM emission tests shows during particulate emissions testing opacity levels were below a 20% threshold level

III. JUSTIFICATION

A. Background

The emission unit is the Chemical Recovery Furnace. Particulate emissions are currently controlled by the ESP. The Research Cottrell ESP is a two chamber unit that is energized by twelve 750 milliamp rated transformer-rectifier (TR) sets. The TR sets are equipped with silicon controlled rectifier mainline controls. Removal of particulate from collecting surfaces and discharge electrodes is accomplished by Magnetic Impulse Gravity Impact LV-1 rappers.

Opacity is an indicator of ESP performance. An increase in opacity would indicate that there is a decrease in the performance of the ESP.

B. Rationale for Selection of Performance Indicators

20% opacity (1 hour) average is a good indicator of ESP performance, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The Chemical Recovery Furnace ESP is efficient at removing particulate. MACT II Performance Test PM results in 2020 were 39.5 lb/hr, which is less than the 48.6 lb/hr PM limit. Opacity values during this testing were below the 20% level.

Verso Paper Quinnesec Mill
CAM Plan
Smelt Dissolving Tank (EU0816-1)
Wet Scrubber for Particulate Matter Control
June 2011

I. BACKGROUND

A. Emissions Unit

Description:	Smelt Dissolving Tank
Identification:	EU0816-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM / PM-10<= 0.41 lb/ton BLS and 31.5 pph (reflects assumed control efficiency of 73% applied to controlled emission limit of 0.11
Controlled Emission Limit:	PM / PM-10 <= 0.107 lb/ton BLS (dry weight), 8.5 pph
Monitoring Requirements:	Scrubbing liquid flow rate

Control Technology

Dynamic Scrubber UW-4, Model IV Scrubber manufactured by Ducon

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Scrubber liquid flow rate

B. Measurement Approach

Analytical Devices:	Rosemount Model: 8705 flow meter complete with flow rate monitor
Monitoring Locations:	Scrubber liquid inlet pipe to the control device

C. Indicator Range

Scrubber Liquid Flow rate:	Minimum – MACT II CMS ranges = 150 gpm (3 hr average)

D. Performance Criteria

Data Representativeness:	The scrubber liquid flow rate is measured at the inlet to the control device
Verification of Operational Status:	Not Applicable.
QA/QC Procedures:	Flow transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Gallons/minute
Recording Process:	Continuously monitored and recorded.
Data Requirements:	The scrubber flow rate measurement is recorded continuously and compared to the MACT II performance test limits.

III. JUSTIFICATION

A. Background

The emission unit is the Smelt Dissolving Tank. Particulate emissions are currently controlled by the Ducon scrubber using caustic/water solution as the scrubbing medium. Smelt dissolving tank gases are routed to a Ducon Dynamic scrubber where scrubbing liquid is injected in the scrubbing body and fan. Particulate is removed by physical contact with the scrubbing medium and then flow to the scrubber recirculation tank.

B. Rationale for Selection of Performance Indicators

Use of a minimum scrubber liquid flow rate is a good indicator of scrubber performance to ensure proper liquid to particulate matter contact for effective removal of the particulate matter from the air stream. If the scrubber liquid flow rate falls below the indicator level, optimum contact between the scrubber liquid and particulate matter in the air stream may not be achieved.

C. Rationale for Selection of Indicator Levels

The selected indicator range is a minimum scrubber liquid flow rate of 150 gallons/minute to the control device. This criterion based on MACT II Performance Testing. Corrective action will immediately follow any excursion from this performance criterion. Such corrective action will be documented and reported to the Agency.

CAM Plan
Lime Kiln (EU0917-1)
Wet Scrubber for Particulate Matter Control
April 2021

I. BACKGROUND

A. Emissions Unit

Description:	Lime Kiln
Identification:	EU0917-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	R 336.2803, 336.2804, 40 CFR 52.21 (c) & (d)
Uncontrolled Emissions:	PM / PM-10 / PM2.5 = approximately 194 pph (reflects assumed control efficiency of 95% applied to controlled emission limit of 9.7 lbs/hour
Controlled Emission Limit:	PM-2.5 & PM-10 <= 9.7 pph PM <= 9.4 pph
Monitoring Requirements:	Scrubbing liquid flow rate and pressure drop (dP)

Control Technology

Venturi Scrubber

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Scrubber liquid flow rate (gallons per minute, gpm) and scrubber pressure drop (inches water column, "W.C.)

B. Measurement Approach

Analytical Devices:	
Flow:	Rosemount 8712 Magnetic Flow Meter
Pressure drop:	Rosemount 3501S dP Transmitters
Monitoring Locations:	
Flow:	Measured on pipe to the control device
Pressure drop:	Measured across scrubber

C. Indicator Range

Scrubber Liquid Flow rate:	Three-hour average scrubber flow rate where the minimum scrubber flow is established as lowest hourly average of the

	minute scrubber flow data collected during the most recent -hour test run which demonstrates compliance with the emissions standard (consistent with 40 CFR 63 Subpart MM SDT scrubber flow monitoring limit).
Pressure drop:	Three-hour average scrubber differential pressure where the scrubber differential pressure is established as lowest hourly average of the minute scrubber differential pressure data collected during the most recent 1-hour test run which demonstrates compliance with the emissions standard (consistent with 40 CFR 63 Subpart MM SDT scrubber flow monitoring limit).

D. Performance Criteria

Data Representativeness:	The scrubber liquid flow rate is measured prior to the scrubber. The pressure drop is measured across the scrubber.
QA/QC Procedures:	Indicators are calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Gallons/minute (gpm) and inches W.C. (" W.C.)
Recording Process:	Continuously monitored and recorded on 3 hour averages.
Data Requirements:	The scrubber flow rate measurement is recorded continuously and recorded on a 3-hour average and compared to the MACT II CMS performance test operating limits for flow and dP.

III. JUSTIFICATION

A. Background

The emission unit is the Lime Kiln which processes lime mud, generating calcium oxide (lime) using natural gas. Particulate emissions are controlled by a Venturi Scrubber using a liquid scrubbing medium. Particulate is removed by physical contact with the scrubbing liquid.

B. Rationale for Selection of Performance Indicators

Minimum scrubber liquid flow rate and pressure drop are good indicators of scrubber performance to ensure proper removal of particulate matter from the lime kiln exhaust stream. This methodology is approved for use in demonstrating compliance with the requirements of 40 CFR 63 Subpart MM. If the scrubber liquid flow rate and/or pressure drop fall below the indicator level, optimum contact between the scrubber liquid and particulate matter in the air stream may not be achieved.

C. Rationale for Selection of Indicator Levels

The selected indicator range is a minimum scrubber liquid flow rate and minimum pressure drop. These parameters are selected based on performance testing established to demonstrate compliance with the requirements of 40 CFR 63 Subpart MM and the Lime Kiln particulate emissions limits listed above. Corrective actions are taken following any excursion from the indicator range. Performance testing is completed every 5 years at minimum. Indicator ranges may be revised based upon performance testing results.

Billerud Quinnesec LLC
CAM Plan
Coal Crusher/Unloading and Handling Operations (EU1125-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Coal Crusher/Unloading and Handling Operations
Identification:	EU1125-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM ≤ 3 grains/dscf (reflects assumed control efficiency of 99% applied to controlled emission limit of 0.03 grains/dscf) equates to 805.9 tpy uncontrolled.
Controlled Emission Limit:	PM ≤ 0.03 gr/dscf
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Johnson-March Corporation

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Dwyer Photohelic Differential Pressure Gauges
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC)

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the manual recording of the delta pressure measurements.

QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Hogged Fuel/Coal Transfer Operations. Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations from the coal handling system. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filters by compressed air and is reclaimed as fuel for the Waste Fuel Boiler.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.1 and 4.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source. Historical Method 9 inspections indicate VE is within limits.

Billerud Quinnesec LLC
CAM Plan
Fuel Hogging Operations(EU1127-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Fuel Hogging Operations
Identification:	EU1127-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM ≤ 3 grains/dscf (reflects assumed control efficiency of 99% applied to controlled emission limit of 0.03 grains/dscf) equates to 2,084.9 tpy uncontrolled.
Controlled Emission Limit:	PM ≤ 0.03 gr/dscf
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Johnson-March Corporation

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Dwyer Photohelic Differential Pressure Gauges
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC)

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the manual recording of the delta pressure measurements

QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day.
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Hogged Fuel/Coal Transfer Operations. Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations in the hog fuel building. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filters by compressed air and is reclaimed and sent to the Waste Fuel Boiler to be burned.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.1 and 4.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source. Historical Method 9 inspections indicate VE is within limits.

Billerud Quinnesec LLC
CAM Plan
Hogged Fuel/Coal Transfer Operations (EU1137-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	**Hogged Fuel/Coal Transfer Operations**
Identification:	**EU1137-1**
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM ≤ 3 grains/dscf (reflects assumed control efficiency of 99% applied to controlled emission limit of 0.03 grains/dscf) equates to 1,559.3 tpy uncontrolled.
Controlled Emission Limit:	PM ≤ 0.03 gr/dscf
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Johnson-March Corporation

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Dwyer Photohelic Differential Pressure Gauges
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC)

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the manual recording of the delta pressure measurements

QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Hogged Fuel/Coal Transfer Operations. Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations in the waste fuel boiler building. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filters by compressed air and is reclaimed and sent to the Waste Fuel Boiler to be burned.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.05 and 1.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source. Historical Method 9 inspections indicate VE is within limits.

Billerud Quinnesec LLC
CAM Plan
Purchased Fuel Hogging Operations (EU1128-1)
Baghouse for Particulate Matter Control
April 2017

I. BACKGROUND

A. Emissions Unit

Description:	Purchased Fuel Hogging Operations
Identification:	EU1128-1
Facility:	Verso Quinnesec LLC

B. Applicable Regulations, Emission Limit, and Monitoring Requirements

Regulation No.:	40 CFR 52.21(j)(3)
Uncontrolled Emissions:	PM ≤ 0.5 grains/dscf (reflects assumed control efficiency of 99% applied to controlled emission limit of 0.005 grains/dscf) equates to 259.8 tpy uncontrolled.
Controlled Emission Limit:	PM ≤ 0.005 gr/dscf
Monitoring Requirements:	Pressure drop across fabric filter collector as monitored by CMS

Control Technology

Bag Filter System – Manufactured by Metso Paper-Donaldson Torit

II. MONITORING APPROACH

The key elements of the monitoring approach are presented below:

A. Indicators

Pressure drop across fabric filter collector

B. Measurement Approach

Analytical Devices:	Dwyer Photohelic Differential Pressure Gauges
Monitoring Locations:	Baghouse Body

C. Indicator Range

dP gauge:	0-10 inches water column (WC)

D. Performance Criteria

Data Representativeness:	The pressure drop is measured at the outlet of the fabric filter
Verification of Operational Status:	Verification that the pressure differential gauge is working is confirmed during the manual recording of the delta pressure measurements

QA/QC Procedures:	Pressure transmitter will be calibration/inspected annually in accordance with manufacturer's specifications
Monitoring Frequency:	Continuous
Reporting Units:	Pressure drop: inches H_2O
Recording Process:	Differential pressure readings are manually recorded two times per day
Data Requirements:	The measurement is recorded daily for comparison to manufacturer's specification

III. JUSTIFICATION

A. Background

The emission unit is the Purchased Fuel Hogging Operations Particulate emissions are currently controlled by the baghouse. The baghouse style dust collector includes a blower and duct system that collects dust from various locations in the purchased hog fuel building. Dust that is drawn into the baghouse is collected on filters. Dust is removed from the filters by compressed air and is reclaimed and sent to the Waste Fuel Boiler to be burned.

B. Rationale for Selection of Performance Indicators

A pressure drop across the fabric filter between 0.0 and 10.0 inches WC is a good indicator of baghouse performance to ensure effective control of particulate matter, as long as proper maintenance is performed.

C. Rationale for Selection of Indicator Levels

The baghouse system is very efficient at removing particulate. Historical daily operational inspections have not indicated elevated visible emissions (VE) from this source.

Revisions

Date	Section/Page	Revision	Reviser
April 2017	All Sections/I.B	Removed the word "limit" after uncontrolled – emission limits are based on controlled emissions	P. LaFleur
	Chemical Recovery Furnace/I.B	Removed regulatory citation 40 CFR 60.282(a)(1)(i) and corresponding PM emission limit of 0.044 gr/dscf @ 8% O2 – The MACT II rule specified monitoring for this limit. Also clarified that the CAM applicable pollutant limits are for PM-10	
	Chemical Recovery Furnace/II.B	Changed monitoring location from flue gas duct to exit of the main stack – this is consistent with language in the ROP.	
	Smelt Dissolving Tank Furnace/I.B	Removed regulatory citation 40 CFR 60.282(a)(2) and corresponding PM emission limit of 0.2 lb/ton BLS– The MACT II rule specified monitoring for this limit. Also clarified that the CAM applicable pollutant limits are for PM and PM-10	
	Waste Fuel Boiler/All	Removed WFB from CAM Plan – The PM limit of 0.06 lb/MMBTU is less stringent than the Boiler MACT PM limit of 0.037 lb/MMBTU – Boiler MACT has prescribed compliance monitoring.	
	Coal Crusher/Unloading/I.B	Removed emission limit of 1.84 lb/hr – this limit is not specified in the ROP.	
	Fuel Hogging Operations/I.B	Removed emission limit of 4.76 lb/hr – this limit is not specified in the ROP.	
	Hogged Fuel/Coal Transfer Operations/I.B	Removed emission limit of 3.56 lb/hr – this limit is not specified in the ROP.	
	Purchased Fuel Hogging/I.B	Corrected uncontrolled emissions estimates and controlled emissions limit – limit was incorrectly specified as 0.03 gr/dscf.; the correct limit is 0.005 gr/dscf.	
10/24/17	Revisions Table	Added this table	P. LaFleur
7/19/19	Table of Contents	Added this table	P. LaFleur
2/12/21	Lime Kiln CAM Plan	Added this for new Lime Kiln PTE limits established for PTI 99-20	P. LaFleur
	Recovery Furnace CAM Plan	Revised emission limits based on PTI 99-20	P. LaFleur
6/6/2022	Chip Production	Per manufacturer's recommendation and ROP minor modification MI-ROP-B7192-2020a, 6/6/22, changed indicator range from 0-8" to 0-10"; changed compliance range from 0.5 – 4" to 0.5 – 10".	P. LaFleur
1/12/2023	General	Changed Verso to Billerud	P. LaFleur

I. PURPOSE/INTENT

This document identifies practices the Quinnesec Mill follows to ensure control of fugitive dust as required by Source-Wide Conditions, condition IX.1 of the mill's Renewal Operating Permit (ROP).

The intent of this program is to ensure the Quinnesec Mill complies with the conditions of the permit. It also provides a means to communicate expectations to mill and contract personnel to ensure compliance on an ongoing basis, in support of quarterly and annual certification reporting.

II. SCOPE

The practices identified here apply to fugitive dust sources directly controlled by the Quinnesec Mill, or contractors and tenants (i.e. Specialty Minerals Inc.) located on the mill site.

While the mill will make every reasonable attempt to control fugitive dust on the mill site, it is recognized that situations will arise where a reasonable level of control is not practical due to acts of nature (i.e. excessive high winds), or unique conditions not foreseen by this plan. Mill personnel will take responsive steps as appropriate under these situations.

III. PRACTICE

A. Overview

1. The Quinnesec Mill manufactures bleach kraft pulp and coated paper. Support facilities for the mill include woodyard, chemical preparation and recovery, power plant, water treatment and wastewater treatment plant operations. The site also contains a landfill, contractor area, and a tenant facility for production of precipitated calcium carbonate.

2. The plan addresses the following areas:

    - Outside Bulk Storage Piles
    - Transport and Handling of Bulk Materials
    - Landfill
    - Outdoor Conveyor Systems
    - Roadways and Lots
    - Manufacturing Activities

B. Outside Bulk Storage Piles

1. Coal

Coal is delivered to the mill by self-unloading trucks. The coal is screened for fine removal prior to shipment, and handled minimally on-site to minimize the amount of fines created. The coal is unloaded directly onto the pile, which is located on a 275 ft. x 200 ft. asphalt pad. This method results in a maximum drop distance of approximately 5 ft. from the dump box. Coal spilled by the loader during reclaiming is cleaned up routinely during the day. The precipitation that falls on the pad is collected in a storm pond retention basin which is routinely pumped to the wastewater treatment plant.

2. Woodchips

Woodchips are stored on a 500 ft. x 400 ft. concrete base pad. Chips are either produced on the mill site or brought in by truck. 90-95% of the chips are produced on site. These chips are screened before transport to the digester to remove fines, such as sawdust and shives.

The chips produced on-site are conveyed to the piles pneumatically. The outlets of the blowing systems have adjustable deflectors. These are set to allow chips to be blown down onto the pile. This minimizes dusting potential. Normally stock piles of chips are kept on the pad minimizing the drop distance between the discharge and the pile.

Chips brought in from an outside source are unloaded by a hydraulic truck dumper. The drop distance is approximately 5 ft. A 10 ft. high wall reduces wind effect. A chip dozer or front-end loader is used to move the chips onto the chip pile. The entire process is performed on the concrete pad described earlier.

3. Wood Refuse

Wood refuse is stored on-site for use as boiler fuel. This consists of bark, oversize and whole-tree chips, and other unusable wood material.

It is either generated by woodyard operation or brought in from off-site. The material generated in the woodyard is brought to the processing building by a series of covered conveyors. The off-site material is unloaded by a truck dump into an underground reclaimer. It is also transported by a covered conveyor. All wood refuse is hogged to achieve a more uniform particle size. The material is then conveyed to a 225 ft. x 80 ft. concrete pad or a 150 ft. x 480 ft. blacktop pad

for storage. Drop distance from the conveyor to the pad is 30 ft. Normal drop is usually much less due to the refuse stockpile under the discharge chute.

C. Transport and Handling of Bulk Material

1. The following bulk dry materials are transported on the mill site by truck or railcar:

   - Purchased Lime
   - Sodium Carbonate
   - Talc
   - Coal
   - Woodchips and Woodwaste
   - Fly ash
   - Starch
   - Lime Rejects

2. The measures to be used for controlling fugitive dust resulting from transporting the above materials are listed below:

   - Truck traffic on mill roads is restricted to a speed limit of 15 - 35 MPH depending upon the location and potential for dust generation.
   - Purchased lime, sodium carbonate, talc and starch are all transported in either sealed hopper trucks or railcars to prevent any material loss.
   - Fly ash and Lime Rejects are transported to the landfill in trucks with leak-proof tailgates. Fugitive emissions from fly ash are controlled by wetting the ash from the Waste Fuel Boiler as it is discharged into the roll-off boxes. Truck speed is further minimized as necessary (below posted) to reduce dusting.
   - Wood chips and coal are transported in covered trailers.
   - Wood waste is mixed with high moisture or large size material to minimize fugitive emissions.

3. The following procedure is used to minimize fugitive dust when handling burnt lime rejects from the Lime Kiln:

   - The lime loading box is placed under the kiln near the building to minimize the effects of wind during loading.
   - The box must be loaded while on the ground, not on the roll-off truck.
   - The loader bucket is filled no more than ¾ full.
   - The bucket is dumped carefully and slowly to minimize dusting.
   - The box is filled no more than ¾ full to control dusting on transport.

D. Landfill Operations

1. Dry materials (i.e. flyash, rejected lime) are dumped into the landfill in pile arrangement (maximum drop of 5 ft.) to minimize the amount of exposed surface area.

2. Other materials that are transported to the landfill that have the potential to dry and become airborne (i.e. lime mud) are dumped to minimize surface area.

3. To reduce potential for fugitive dust, materials of higher moisture (sludge, dregs, slaker grit) are intermixed with dry material.

4. The landfill paved roads are maintained as a means to minimize vehicle traffic airborne dust generation and the roads are swept on an as needed basis as part of normal operations.

E. Outdoor Conveying

1. Materials transported on outdoor conveyor systems are listed below:

   - Woodchips (screened and unscreened)
   - Wood refuse (bulk, oversize chips, fines, etc.)
   - Coal (uncrushed and crushed)

2. All outside conveyor systems are completely enclosed with top covers. This prevents the escape of fugitive emissions. Wood wastes and coal that may spill at transfer points are reclaimed by bucket loader and mixed with other higher moisture and coarse material to minimize potential for suspension. A high level of housekeeping is maintained, with regular cleaning.

F. Woodyard Unloading Pads, Roads, and Parking Lots

1. There are 11.6 miles of roadway on the mill site. Of that, only 2.5 are crushed stone. The rest of the roads are either concrete or asphalt. In addition, the unloading and reclaim areas for the woodyard and waste fuel storage operation consist of concrete or asphalt pads. The mill parking lot is also asphalt.

   - Cleaning, watering, and/or application of dust suppressant on mill roadways, parking lots, and process areas where dust has accumulated is performed by contract services as needed.

2. The gravel roads are located where sparse vehicle traffic is expected. These areas include the river intake and outfall sites, storm pond, and strong waste pond. Dust control measures for these areas are listed below:

- A posted speed limit of 20 MPH is specified for gravel roads.
- Water or a dust suppressant (i.e. calcium chloride) will be applied as necessary during dry weather to control dust.
- The roads will be graded as necessary to maintain a compacted surface.

G. Manufacturing Activities

1. Manufacturing activities that have the potential for fugitive emissions are equipped with particulate control equipment. These processes, the control equipment and additional dust control measures are detailed in this section.

2. Coal Crushing and Transport

   The first bag house collects dust from all transfer points before and after the crusher. A second bag house collects dust from the transfer points at and before the boiler coal silo. The baghouses are part of the coal conveyor interlocks. The conveyors cannot be used to transport coal if the baghouses are not operating. In addition to these measures all coal conveyors are completely enclosed with a sealed cover.

3. Wood Refuse Hog

   As noted earlier, all wood waste used as boiler fuel is hogged to provide for more uniform sized material. All conveyors used for hog fuel transfer are covered to minimize fugitive emissions. The baghouse which handles the transfer points or the coal silo feed conveyors also handles the wood refuse surge bin supply conveyor.

4. Chip Screen

   A bag filter dust collection system is used to remove dust generated at various points throughout the screening process. The exhaust from the rechipper blower system cyclone is handled by the chip screen bag house.

   The unscreened and screened chips are handled on covered conveyors to minimize dusting. Fines and oversize material, which are not rechipped, are discharged via covered conveyors to collection areas for disposal. These areas have walls on three sides to facilitate clean-up and minimize blowing material. These piles are cleaned up and either reprocessed or hauled to the landfill for disposal daily.

5. Lime Kiln and Recausticizing

   This area includes the equipment necessary to reduce particulate emissions from the purchased lime unloading and handling operations. A baghouse handles the

emissions associated with unloading of purchased lime from trucks to the storage silo. This collection system also ensures fugitive dust is minimized in the operating area.

6. Starch Unloading

   Starch is brought on site in sealed rail cars. The starch is conveyed pneumatically into three silos. Each of the silos is equipped with a baghouse filter. These filters remove any entrained particulates from the silo exhaust stream.

IV. RESPONSIBLITIES

A. Operating departments are responsible for maintaining a high level of housekeeping in their areas, and ensuring fugitive dust control practices and equipment are maintained, to minimize the potential for fugitive dust issues.

B. Operating departments are responsible for conducting routine outdoor rounds to assure that fugitive dust is under control, and that appropriate notification is made (contract service and environmental) when fugitive dust conditions warrant.

C. Individuals noticing abnormal fugitive dust conditions are responsible for notifying the appropriate operating area.

D. Actions taken to address fugitive dust concerns must be expedited to ensure compliance with these requirements.

E. Environmental personnel, in conjunction with the operating department, are responsible for determining if a deviation from the ROP exists due to a fugitive dust issue.

F. Specialty Minerals, Inc. (SMI) is responsible assuring for conducting routine rounds and maintaining fugitive dust control practices and equipment in their area.

Document Revisions

Date	Revision	Reviser
2/13/02	Original document – no revisions This program was approved by the Michigan Department of Environmental Quality (MDEQ) on February 13, 2002.	
6/10/08	Original DMS version – no revisions	
3/19/19	Changed document owner to Katie Tomasoski; Added blacktop pad to section III.B.3	Paula LaFleur
12/12/19	Added revisions table	Paula LaFleur
6/3/21	Changed document owner to Sarah Blanzy; added Section III.C.3 for controlling dust from lime handling; other minor clarifications.	Paula LaFleur
2/9/24	Changed document owner to Environmental. Removed references to Verso. Changed logo to Billerud. Added review and revision dates to header.	Paula LaFleur

End of Document

INTRODUCTION

This Malfunction Abatement Plan (MAP) identifies practices the Quinnesec Mill follows to ensure the condensing steam turbine generator cooling tower (EUCOOLTWR) operates in accordance with the mill's Renewable Operation Permit, Special Condition III.1.

Process Description:

The Quinnesec mill's condensing steam turbine generator supplies electricity for the mill's pulp and paper making processes. Steam produced by the mill's Waste Fuel Boiler (EU1121) is used to power the turbine generator. Unused exhaust steam discharged from the turbine generator is condensed and reused in the boiler feed water process. Process mill water used to cool the turbine exhaust steam is sent to a fiberglass counter flow type cooling tower to be cooled and recycled back to the mill process water system. The cooling tower includes drift eliminators to ensure that emission standards are met.

PREVENTATIVE MANTENANCE

To maintain environmentally sound operation of the cooling tower drift eliminators, an ongoing preventative maintenance program is essential. The preventative maintenance program is presented here.

Responsible Personnel

Personnel responsible for overseeing the inspections, maintenance and repair of the cooling tower drift eliminators are indicated below:

- Recovery and Utilities Maintenance Manager
- Team Leaders
- Water Treatment Operators

Inspection and Frequency

The cooling water tower is inspected regularly to insure proper operation of the cooling tower control equipment (drift eliminators). The frequency of inspection for each item is indicated. Corrective measures will be taken to service or maintain those items which are found to require action.

Operating personnel conduct routine inspections of the cooling tower equipment (i.e., drift eliminators) and immediately report any operation issues to their supervisor.

Daily:

The water treatment plant operator conducts daily rounds including observation of the cooling tower equipment to verify proper operation.

Monthly:

Detailed inspections are conducted monthly on critical cooling tower equipment that includes:

- Inspect drift eliminator for clogging
- Check fill for clogging
- Check oil seals
- Check static oil level
- Check oil for water and sludge

Spare Parts

An adequate supply of spare parts will be maintained on site for maintenance and repair of the cooling tower equipment.

OPERATING VARIABLES AND CORRECTIVE ACTION

The Quinnesec mill operates the cooling tower in accordance with manufacture's specification to ensure compliance with drift limits as certified by the manufacture. The cooling tower will not operate unless the drift eliminators are installed and functioning properly. To ensure the drift eliminators remain free from biological build-up, water treatment chemicals (i.e., chlorine) can be added to the cooling tower inlet water.

The Quinnesec mill's Renewable Operating Permit requires the mill to record particulate emissions from the cooling tower on a calendar month basis (Special Condition, VI. 2.). An example calculation is detailed below:

Process water design inlet flow = 18,700 gallons per minute

Total dissolved solids = 225 mg/l, (0.002 lb/gal)
Maximum drift rate = 0.0009%
Operating hours per month = 744

Particulate emission rate (Tons per Month):

(18,700 gal/min) x (0.002 lb/gal) x (60 min/hr) x (744 hr/month) x (0.0009%)/(2000 lb/ton) = 0.008

OTHER CONSIDERATIONS

This Malfunction Abatement Plan may be updated periodically as operating and maintenance experience with the equipment is gained.

INTRODUCTION

This Malfunction Abatement Plan (MAP) identifies practices Billerud Quinnesec LLC follows to ensure that the Purchased Fuel Hogging Operations (EU1128) operates in accordance with the mill's Renewable Operating Permit, MI-ROP-B7192, EU1128-1, Special Condition III. 1.

Process Description:

The Purchased Fuel Hogging Operations system is used to receive incoming hog fuel delivered in trucks. The hog fuel trucks are tilted up on a platform dumper to enable the hog fuel to discharge into a hopper. The hog fuel is then sent to the purchased hog fuel conveyor where it is transferred to the purchased hog fuel building for processing. The acceptable sized material is conveyed to the transfer building, where it mixes with internal processed bark and is conveyed to the hog fuel storage pile. From the hog fuel storage pile the hog fuel is reclaimed and conveyed to the Waste Fuel Boiler (EU1121) to be used as fuel.

The purchased hog fuel building is equipped with a dust collection system that includes a high efficiency fabric filter. All of the chute work, screens, and the hogging systems located in the building are sealed for dust control. There are also pickup points and piping in various places to reduce positive pressure on the system, and to collect dust at key areas. The conveyors entering and leaving the building are covered to contain dust.

The collected material drops to the bottom of the dust collection system goes through a rotary air lock feeder to maintain the negative pressure in the collector bag house. This collected material is discharged onto the purchased fuel transfer conveyor. Dust particles are filtered out by high efficiency fabric bags contained in the dust collector body. The dust collector filter system is self-cleaning as controllable pulses of compressed air blow the accumulated wood dust off of the bags. The dust collector fabric filter system includes a leak detection system to ensure that the bags are operating at optimum efficiency.

PREVENTATIVE MANTENANCE

To maintain environmentally sound operation of the dust collector bag filters, an ongoing preventative maintenance program is essential. The preventative maintenance program for the Quinnesec Mill dust collector is presented here.

Responsible Personnel

The supervisory personnel responsible for overseeing the inspections, maintenance and repair of the air cleaning devices are:

- Wood Yard Operations Manager
- Operations and Maintenance Coordinator
- Fuel Handler Operator

Inspection and Frequency

The purchased hogfuel dust collector is inspected regularly to insure proper operation. The frequency of inspection for each item is indicated. Corrective measures are taken to service or maintain those items which are found to require action.

Daily:

Wood yard operation personnel perform daily inspections of the dust collection filter system and report any operations issues to their supervisor.

Weekly:

Wood yard maintenance personnel perform detailed weekly inspections that include inspection of critical equipment such as fans, blowers, bearings, belts etc.

Monthly:

Routine preventative maintenance is also conducted on a monthly basis. Preventive maintenance includes oiling and greasing of equipment as well as detailed vibrations analysis on critical dust collector equipment.

Spare Parts

Proper operation of the dust collector will assure compliance with the emission standard. Critical spare parts such as replacement filter bags are kept on-site for replacement.

OPERATING VARIABLES AND CORRECTIVE ACTION

The Quinnesec mill operates the fabric filter dust collector in accordance with manufacture's specification to insure compliance with emission standards.

The fabric filter dust collector is equipped with a Broken Bag Leak Detector System that continuously monitors the efficiency of the filter bags. The leak detector will alarm in the event of a filter bag malfunction notifying operation personnel. Corrective measures are taken immediately to fix malfunctioning equipment.

OTHER CONSIDERRATIONS

This Malfunction Abatement Plan may be updated periodically as operating and maintenance experience with the equipment is gained.

PLAN REVISIONS

Date	Revision	Revisor
5/30/2012	Original Verso Version	NA
6/18/2024	Changed Verso to Billerud, changed PTI number to ROP number (PTI incorporated into ROP). Verified PM items with Woodyard.	Paula LaFleur

Section 1. Registration Information

	Reason for Correction/Resubmission:	5-year update (40 CFR 68.190(b)(1))

Source Identification

1.1.a.	Facility Name:	Billerud Quinnesec LLC
1.1.b.	Parent Company #1 Name:	Billerud NA
1.1.c.	Parent Company #2 Name:	

Facility Identification

1.2.	EPA Facility Identifier:	1000 0004 6835
1.3.	Other EPA Systems Facility ID:	49876CHMPNUSHIG
	Facility Registry System ID:	

Dun and Bradstreet Numbers (DUNS)

1.4.a.	Facility DUNS:	38771036
1.4.b.	Parent Company #1 DUNS:	826480902
1.4.c.	Parent Company #2 DUNS:	

Facility Location Address

1.5.a.	Street 1:	W6791 U.S. Highway 2
1.5.b.	Street 2:	
1.5.c.	City:	Quinnesec
1.5.d.	State:	MICHIGAN
1.5.e.	ZIP:	49876
	ZIP4:	
1.5.f.	County:	DICKINSON

Facility Latitude and Longitude

1.5.g.	Latitude (decimal):	45.795587
1.5.h.	Longitude (decimal):	-87.958358
1.5.i.	Lat/Long Method:	I3 Interpolation - Satellite
1.5.j.	Lat/Long Description:	ST Storage Tank
1.5.k.	Horizontal Accuracy Measure (meters):	1
1.5.l.	Horizontal Reference Datum Name:	North American Datum of 1983
1.5.m.	Source Map Scale Number:	

Owner or Operator

1.6.a.	Operator Name:	Billerud NA
1.6.b.	Operator Phone:	(877) 855-7243
1.6.c.	Operator Street 1:	8540 Gander Creek Drive
1.6.d.	Operator Street 2:	
1.6.e.	Operator City:	Miamisburg
1.6.f.	Operator State:	OHIO
1.6.g.	Operator ZIP:	45342
	Operator ZIP4:	
1.6.f.	Operator Foreign State or Province:	
1.6.g.	Operator Foreign Country:	

1.6.h.	Operator Foreign ZIP:	

Name and title of person or position responsible for Part 68 (RMP) Implementation

1.7.a.	Name of Person:	Sara Wils
1.7.b.	Title of Person or Position:	EHS Specialist
1.7.c.	E-mail Address:	sara.wils@billerud.com

Emergency Contact

1.8.a.	Emergency Contact Name:	Sara Wils
1.8.b.	Emergency Contact Title:	EHS Specialist
1.8.c.	Emergency Contact Phone:	(906) 779-3639
1.8.d.	Emergency Contact 24-Hour Phone:	(906) 779-3299
1.8.e.	Emergency Contact Ext. or PIN:	9067793639
1.8.f.	Emergency Contact E-mail Address:	sara.wils@billerud.com

Other Points of Contact

1.9.a.	Facility or Parent Company E-mail Address:	Misty.Nehring@billerud.com
1.9.b.	Facility Public Contact Phone:	(906) 779-3576
1.9.c.	Facility or Parent Company WWW Homepage Address:	https://www.billerud.com/

Local Emergency Planning Committee

1.10.	LEPC:	Dickinson County LEPC

Full Time Equivalent Employees

1.11.	Number of Full Time Employees (FTE) on Site:	426
	FTE Claimed as CBI:	

Covered By

1.12.a.	OSHA PSM :	Yes
1.12.b.	EPCRA 302 :	Yes
1.12.c.	CAA Title V:	Yes
1.12.d.	Air Operating Permit ID:	MI-ROP-B7192-20

OSHA Ranking

1.13.	OSHA Star or Merit Ranking:	Y

Last Safety Inspection

1.14.	Last Safety Inspection (By an External Agency) Date:	09-Jul-2024
1.15.	Last Safety Inspection Performed By an External Agency:	State of Michigan Department of Labor and Economic

Predictive Filing

1.16.	Did this RMP involve predictive filing?:	

Preparer Information

1.18.a.	Preparer Name:	Sara Wils
1.18.b.	Preparer Phone:	(906) 779-3639
1.18.c.	Preparer Street 1:	PO Box 191
1.18.d.	Preparer Street 2:	
1.18.e.	Preparer City:	Norway
1.18.f.	Preparer State:	MICHIGAN
1.18.g.	Preparer ZIP:	49870
	Preparer ZIP4:	
1.18.f.	Preparer Foreign State:	
1.18.g.	Preparer Foreign Country:	
1.18.h.	Preparer Foreign ZIP:	

Process 1

	Process ID:	1000144783
	Description:	Chlorine Dioxide System
1.17.a.	Program Level:	Program Level 3 process
1.17.b.	NAICS Code:	32212
	NAICS Description:	Paper Mills

1.17.c.1.	Chemical Name:	Chlorine dioxide [Chlorine oxide (ClO2)]
1.17.c.2.	CAS Number:	10049-04-4
1.17.c.3.	Quantity (lbs):	20000
	CBI Claimed:	
	Flammable/Toxic:	Toxic

Section 2. Toxics: Worst Case (Sensitive)

This section contains sensitive data.

Scenario 1 Toxic Worst ID: 1000116375

	Process ID:	1000144783
	Description:	Chlorine Dioxide System
	Process Chemical ID:	1000180987
2.1.a.	Chemical Name:	Chlorine dioxide [Chlorine oxide (ClO2)]
2.1.b.	Percent Weight:	1.2
2.2.	Physical State:	Liquid
2.3.	Model Used:	Degadis
2.4.	Scenario:	Liquid spill & vaporization
2.5.	Quantity Released (lbs):	10000
2.6.	Release Rate (lbs/min):	200.0
2.7.	Release Duration (mins):	60
2.8.	Wind Speed (m/sec):	1.5
2.9.	Atmospheric Stability Class:	F
2.10.	Topography:	Rural
2.11.	Distance to Endpoint (mi):	5.8
2.12.	Estimated residential population within distance to endpoint (numbers):	15000

Confidential Business Information

	CBI Claimed:	

Public Receptors within Distance to Endpoint

2.13.a.	Schools:	Yes
2.13.b.	Residences:	Yes
2.13.c.	Hospitals:	Yes
2.13.d.	Prisons/Correctional Facilities:	Yes
2.13.e.	Recreational Areas:	Yes
2.13.f.	Major commercial, office or industrial areas:	Yes
2.13.g.	Other Type:	

Environmental Receptors within Distance to Endpoint

2.14.a.	National or State Parks, Forests or Monuments:	
2.14.b.	Officially Designated Wildlife Sanctuaries, Preserves or Refuges:	
2.14.c.	Federal Wilderness:	
2.14.d.	Other Type:	

Passive Mitigation Considered

2.15.a.	Dikes:	Yes
2.15.b.	Enclosures:	
2.15.c.	Berms:	
2.15.d.	Drains:	Yes

2.15.e.	Sumps:	Yes
2.15.f.	Other Type:	

Graphics

2.16.	Graphic File:	

Section 3. Toxics: Alternative Release (Sensitive)

This section contains sensitive data.

Scenario 1 Toxic Alter ID: 1000123647

	Process ID:	1000144783
	Description:	Chlorine Dioxide System
	Process Chemical ID:	1000180987
3.1.a.	Chemical Name:	Chlorine dioxide [Chlorine oxide (ClO2)]
3.1.b.	Percent Weight:	1.2
3.2.	Physical State:	Liquid
3.3.	Model Used:	Safer Trace
3.4.	Scenario:	Pipe leak
3.5.	Quantity Released (lbs):	300
3.6.	Release Rate (lbs/min):	10.0
3.7.	Release Duration (mins):	30
3.8.	Wind Speed (m/sec):	3.0
3.9.	Atmospheric Stability Class:	D
3.10.	Topography:	Rural
3.11.	Distance to Endpoint (mi):	0.35
3.12.	Estimated residential population within distance to endpoint (numbers):	0

Confidential Business Information

	CBI Claimed:	

Public Receptors within Distance to Endpoint

3.13.a.	Schools:	
3.13.b.	Residences:	
3.13.c.	Hospitals:	
3.13.d.	Prison/Correctional Facilities:	
3.13.e.	Recreational Areas:	
3.13.f.	Major commercial, office or industrial areas:	
3.13.g.	Other Type:	Adjacent landowners

Environmental Receptors within Distance to Endpoint

3.14.a.	National or State Parks, Forests or Monuments:	
3.14.b.	Officially Designated Wildlife Sanctuaries, Preserves or Refuges:	
3.14.c.	Federal Wilderness:	
3.14.d.	Other Type:	

Passive Mitigation Considered

3.15.a.	Dikes:	
3.15.b.	Enclosures:	
3.15.c.	Berms:	
3.15.d.	Drains:	Yes

3.15.e.	Sumps:	
3.15.f.	Other Type:	Containment Curbs

Active Mitigation Considered

3.16.a.	Sprinkler System:	
3.16.b.	Deluge System:	
3.16.c.	Water Curtain:	
3.16.d.	Neutralization:	
3.16.e.	Excess Flow Valve:	
3.16.f.	Flares:	
3.16.g.	Scrubbers:	Yes
3.16.h.	Emergency Shutdown:	Yes
3.16.i.	Other Type:	Area monitors, automatic relief systems

Graphics

3.17.	Graphic File:	

Section 4. Flammables: Worst Case (Sensitive)

This section contains sensitive data.

No records found.

Section 5. Flammables: Alternative Release (Sensitive)

This section contains sensitive data.

No records found.

Section 6. Accident History

No records found.

Section 7. Program Level 3

Program 1 Prevention Program ID: 1000123887

Prevention Program Description

Chlorine Dioxide System

NAICS Code for process

7.1.a.	Process Name:	1000144783 (Chlorine Dioxide System)
7.1.b.	NAICS Code:	32212 (Paper Mills)

Chemicals

7.2.	Prevention Program Chemical ID:	1000155328
7.2.	Chemical Name:	Chlorine dioxide [Chlorine oxide (ClO2)]
7.2.	Flammable/Toxic:	Toxic
7.2.	CAS Number:	10049-04-4

Safety Information

7.3.	Safety Review Date (The date on which the safety information was last reviewed or revised):	10-Jul-2024

Process Hazard Analysis (PHA)

7.4.a.	PHA Completion Date (Date of last PHA or PHA update):	10-Jul-2024
7.4.b.1.	What If:	
7.4.b.2.	Checklist:	Yes
7.4.b.3.	What If/Checklist:	
7.4.b.4.	HAZOP:	Yes
7.4.b.5.	Failure Mode and Effects Analysis:	
7.4.b.6.	Fault Tree Analysis:	
7.4.b.7.	Other Technique Used:	
7.4.c.	PHA Change Completion Date (The expected or actual date of completion of all changes resulting from last PHA or PHA update):	31-Dec-2024

Major Hazards Identified

7.4.d.1.	Toxic Release:	Yes
7.4.d.2.	Fire:	Yes
7.4.d.3.	Explosion:	
7.4.d.4.	Runaway Reaction:	Yes
7.4.d.5.	Polymerization:	
7.4.d.6.	Overpressurization:	Yes
7.4.d.7.	Corrosion:	Yes
7.4.d.8.	Overfilling:	Yes
7.4.d.9.	Contamination:	Yes
7.4.d.10.	Equipment Failure:	Yes
7.4.d.11.	Loss of Cooling, Heating, Electricity, Instrument Air:	Yes
7.4.d.12.	Earthquake:	
7.4.d.13.	Floods (Flood Plain):	
7.4.d.14.	Tornado:	Yes

7.4.d.15.	Hurricanes:	
7.4.d.16.	Other Major Hazard Identified:	

Process Controls in Use

7.4.e.1.	Vents:	Yes
7.4.e.2.	Relief Valves:	Yes
7.4.e.3.	Check Valves:	Yes
7.4.e.4.	Scrubbers:	Yes
7.4.e.5.	Flares:	
7.4.e.6.	Manual Shutoffs:	Yes
7.4.e.7.	Automatic Shutoffs:	Yes
7.4.e.8.	Interlocks:	Yes
7.4.e.9.	Alarms and Procedures:	Yes
7.4.e.10.	Keyed Bypass:	
7.4.e.11.	Emergency Air Supply:	
7.4.e.12.	Emergency Power:	Yes
7.4.e.13.	Backup Pump:	Yes
7.4.e.14.	Grounding Equipment:	Yes
7.4.e.15.	Inhibitor Addition:	
7.4.e.16.	Rupture Disks:	Yes
7.4.e.17.	Excess Flow Device:	
7.4.e.18.	Quench System:	Yes
7.4.e.19.	Purge System:	Yes
7.4.e.20.	None:	
7.4.e.21.	Other Process Control in Use:	

Mitigation Systems in Use

7.4.f.1.	Sprinkler System:	Yes
7.4.f.2.	Dikes:	Yes
7.4.f.3.	Fire Walls:	
7.4.f.4.	Blast Walls:	
7.4.f.5.	Deluge System:	Yes
7.4.f.6.	Water Curtain:	
7.4.f.7.	Enclosure:	Yes
7.4.f.8.	Neutralization:	
7.4.f.9.	None:	
7.4.f.10.	Other Mitigation System in Use:	Curbing and Sewers

Monitoring/Detection Systems in Use

7.4.g.1.	Process Area Detectors:	Yes
7.4.g.2.	Perimeter Monitors:	
7.4.g.3.	None:	
7.4.g.4.	Other Monitoring/Detection System in Use:	Personal Monitors

Changes Since Last PHA Update

7.4.h.1.	Reduction in Chemical Inventory:	
7.4.h.2.	Increase in Chemical Inventory:	
7.4.h.3.	Change Process Parameters:	
7.4.h.4.	Installation of Process Controls:	Yes
7.4.h.5.	Installation of Process Detection Systems:	
7.4.h.6.	Installation of Perimeter Monitoring Systems:	

7.4.h.7.	Installation of Mitigation Systems:	
7.4.h.8.	None Recommended:	
7.4.h.9.	None:	
7.4.h.10.	Other Changes Since Last PHA or PHA Update:	

Review of Operating Procedures

7.5.	Operating Procedures Revision Date (The date of the most recent review or revision of operating procedures):	10-Jul-2024

Training

7.6.a.	Training Revision Date (The date of the most recent review or revision of training programs):	12-Jul-2024

The Type of Training Provided

7.6.b.1.	Classroom:	
7.6.b.2.	On the Job:	Yes
7.6.b.3.	Other Training:	Certification standards and operating manual review.

The Type of Competency Testing Used

7.6.c.1.	Written Tests:	
7.6.c.2.	Oral Tests:	Yes
7.6.c.3.	Demonstration:	Yes
7.6.c.4.	Observation:	Yes
7.6.c.5.	Other Type of Competency Testing Used:	Certification boards, computer based training.

Maintenance

7.7.a.	Maintenance Procedures Revision Date (The date of the most recent review or revision of maintenance procedures):	20-Nov-2023

7.7.b.	Equipment Inspection Date (The date of the most recent equipment inspection or test):	07-May-2024

7.7.c.	Equipment Tested (Equipment most recently inspected or tested):	Tank Inspections During Major Outage

Management of Change

7.8.a.	Change Management Date (The date of the most recent change that triggered management of change procedures):	04-May-2024

7.8.b.	Change Management Revision Date (The date of the most recent review or revision of management of change procedures):	13-Jun-2023

Pre-Startup Review

7.9.	Pre-Startup Review Date (The date of the most recent pre-startup review):	14-Feb-2014

Compliance Audits

7.10.a.	Compliance Audit Date (The date of the most recent compliance audit):	17-Feb-2021
7.10.b.	Compliance Audit Change Completion Date (Expected or actual date of completion of all changes resulting from the compliance audit):	17-Mar-2021

Incident Investigation

7.11.a.	Incident Investigation Date (The date of the most recent incident investigation (if any)):	27-Jun-2024
7.11.b.	Incident Investigation Change Date (The expected or actual date of completion of all changes resulting from the investigation):	31-Dec-2024

Employee Participation Plans

7.12.	Participation Plan Revision Date (The date of the most recent review or revision of employee participation plans):	21-Jun-2023

Hot Work Permit Procedures

7.13.	Hot Work permit Review Date (The date of the most recent review or revision of hot work permit procedures):	04-Apr-2024

Contractor Safety Procedures

7.14.	Contractor Safety Procedures Review Date (The date of the most recent review or revision of contractor safety procedures):	01-Nov-2023

7.15.	Contractor Safety Performance Evaluation Date (The date of the most recent review or revision of contractor safety performance):	04-Jul-2024

Confidential Business Information

	CBI Claimed:	

Section 8. Program Level 2

No records found.

Section 9. Emergency Response

Written Emergency Response (ER) Plan

9.1.a.	Community Plan (Is facility included in written community emergency response plan?):	Yes
9.1.b.	Facility Plan (Does facility have its own written emergency response plan?):	Yes
9.2.	Response Actions (Does ER plan include specific actions to be taken in response to accidental releases of regulated substance(s)?):	Yes
9.3.	Public Information (Does ER plan include procedures for informing the public and local agencies responding to accidental release?):	Yes
9.4.	Healthcare (Does facility's ER plan include information on emergency health care?):	Yes

Emergency Response Review

9.5.	Review Date (Date of most recent review or update of facility's ER plan):	26-Jun-2024

Emergency Response Training

9.6.	Training Date (Date of most recent review or update of facility's employees):	26-Jun-2024

Local Agency

9.7.a.	Agency Name (Name of local agency with which the facility ER plan or response activities are coordinated):	Dickinson County LEPC
9.7.b.	Agency Phone Number (Phone number of local agency with which the facility ER plan or response activities are coordinated):	(906) 779-1731

Subject to

9.8.a.	OSHA Regulations at 29 CFR 1910.38:	Yes
9.8.b.	OSHA Regulations at 29 CFR 1910.120:	Yes
9.8.c.	Clean Water Regulations at 40 CFR 112:	Yes
9.8.d.	RCRA Regulations at CFR 264, 265, and 279.52:	Yes
9.8.e.	OPA 90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, or 30 CFR 254:	
9.8.f.	State EPCRA Rules or Laws:	Yes
9.8.g.	Other (Specify):	MIOSHA Part 91-Process Safety

Executive Summary

RISK MANAGEMENT PLAN
BILLERUD QUINNESEC LLC
QUINNESEC, MICHIGAN
SEPTEMBER 2006 updated 2011, 2014, 2019 , 2024
EPA Facility Identifier: 1000 0004 6835

1. Executive Summary

Billerud NA owns and operates the Quinnesec Mill, an integrated pulp and paper facility located approximately 2 miles east of Quinnesec, Michigan. The Quinnesec Mill is committed to operating in a manner that is safe for employees, the public, and the environment. As a demonstration of that commitment, Billerud NA has developed and implemented Environmental, Health and Safety Policies to serve as guiding principles for all of it's employees and operations. Following these policies is the responsibility of every employee.

As part of this commitment, a system has been established to help ensure safe operation of the processes at this facility. One component of this system is a risk management program (RMP) that helps manage the risks at the Quinnesec Mill and that complies with the requirements of the Environmental Protection Agency's (EPA's) regulation 40 CFR part 68, "Accidental Release Prevention Requirements: Risk Management Programs" (the RMP rule). One of the requirements of the RMP rule is to submit a risk management plan (RMPlan) describing the risk management program. This document is intended to satisfy the RMPlan requirement of the RMP rule and to provide the public with a description of the risk management program at the Quinnesec Mill.

The risk management program consists of three elements;
- A hazard assessment to help understand the potential offsite consequences of hypothetical accidental releases including a history of accidents that have occurred during the last five years associated with the use of substances regulated by the RMP rule;
- A prevention program to help maintain and safely operate the processes containing more than a threshold quantity of a regulated substance; and
- An emergency response program to guide response to an accidental release of a regulated substance.

Information further describing these elements is provided in this RMPlan.

Although the risk management program helps provide assurance that the facility is maintained and operated in a safe manner, it is only one component of the safety program at the Quinnesec Mill. In fact, a comprehensive safety program is in place establishing many levels of safeguards against release of a hazardous substance and injuries and damage from a release of a hazardous substance.

Hazardous substance uses are limited at the Quinnesec Mill. Before using a hazardous substance, less hazardous alternatives are considered. Part of the RMP compliance philosophy has been the reduction of the use of hazardous substances covered under this regulation. When a hazardous substance is used, considerations are made for the potential for this substance to adversely affect mill employees, the public, and the environment and steps are taken to prevent any such effects.

1.1 Accidental Release Prevention and Emergency Response Policies

The Quinnesec Mill is committed to the safety of employees and the public, and the preservation of the environment through the prevention of accidental releases of hazardous substances. The mill implements reasonable controls to prevent foreseeable releases of hazardous substances. These controls include training programs for personnel; programs to help ensure safety in the design, installation, operation, and maintenance of processes, and programs to evaluate hazards.

In the event of an accidental release emergency procedures are enacted to control and contain the release in a manner that will minimize potential injury to employees, the public or the environment. The mill provides response training to employees, designates an emergency response coordinator to oversee response activities, and coordinates response efforts with the local fire department. The Quinnesec Mill maintains a Hazardous Materials Response team that is trained and equipped to respond to on-site chemical releases. Response activities have also been discussed with the LEPC.

1.2 Regulated Substances

The Quinnesec Mill is an integrated pulp and paper mill primarily involved in the manufacture of bleached pulp and related finished paper products. As part of this manufacturing process, regulated substances are handled in sufficient quantities to be covered by the RMP rule. The RMP-covered substance is Chlorine Dioxide.

1.3 Accidental Release Prevention Program and Chemical-specific Prevention

The Quinnesec Mill has always focused on ways to prevent accidental releases of hazardous substances. Beginning in 1992, the mill formally implemented the 14 elements of OSHA's Process Safety Management (PSM) prevention program. In 1996 the EPA RMP rule established Program 3 prevention requirements which were subsequently implemented by the mill.

Program 3 is essentially the same as OSHA PSM, except that the program also focuses on protecting the public and the environment. Program 3 requires 13 of the 14 elements of the OSHA PSM regulation and is the most rigorous prevention program.

The following sections briefly describe the elements of the prevention program that address the EPA RMP rule prevention program requirements.

1.3.1 Program 3 Prevention Program
The Quinnesec Mill Program 3 prevention program consists of the following 12 elements:

1. Process Safety Information: The mill maintains a variety of technical documents that are used to help ensure safe operation

of the covered processes. These documents address the physical properties of hazardous substances handled in these processes, the operating parameters of the equipment/process and the design basis and configuration of process equipment.

Safety data sheets (SDSs) document the properties of hazardous substances handled at the mill including regulated substances in covered processes. Information on the technology and engineering design aspects include the operating parameters and the design basis and configuration of the process equipment.

Many of the operating parameters are included in the operating procedures to help with the safe operation of the process. These documents are used to train employees, to perform process hazards analyses, and to help maintain the equipment.

2. Process Hazard Analysis: The Quinnesec Mill performs and periodically updates process hazard analyses (PHAs) of the covered processes to help identify process hazards and generate recommendations that might improve the safe operation of the process. A team composed of personnel with engineering and process operating experience and a leader with process hazard analyses experience is assembled to analyze the hazards of the process. The hazard and operability (HAZOP) technique is used primarily, supplemented with checklists, to perform this analysis. The PHA team prepares a written report describing the results of the analysis, including a list of recommendations. Responsibility to resolve the recommendations is assigned to area personnel and, when appropriate, changes to enhance the safety of the process are implemented.

3. Operating Procedures: Mill operators, process engineers and supervisors work together to develop and maintain operating procedures to define how tasks related to process operations should be safely performed. The operating procedures are used to train employees and serve as reference guides for appropriate actions to take during both normal operations and process upsets.

Operating procedures have been developed and are maintained. The procedures cover all phases of operations, including initial startup, normal operations, normal shutdown, emergency shutdown, and startup following a shutdown. The operating procedures are used both to help in operating the covered processes and as a training guide for both new and experienced operators. Operating procedures are reviewed at least annually to ensure they reflect current operating conditions.

4. Training: The mill trains workers to perform their assigned tasks safely and effectively. The training program includes both initial and refresher training that covers a general overview of the process, the properties and hazards of the substances in the process, and a detailed review of the process operating procedures and safe work practices. Oral reviews and written tests are used to verify that an employee understands the process operation prior to job assignment.

The operators are consulted annually during operating procedure reviews to evaluate the effectiveness and need for additional training. Recommendations from the operators are reviewed, and changes to the training program are implemented, as appropriate.

5. Mechanical Integrity: Mechanical integrity of process equipment is maintained to help prevent equipment failures that could endanger employees, the public, or the environment. This is accomplished by an inspection and testing program to help identify equipment deterioration and damage before the equipment fails, a quality assurance program to help ensure that new and replacement equipment meet the design standards required for service in the covered processes, and utilizing personnel who are specially trained to maintain process equipment.

6. Management of Change: The management of change program requires evaluation and approval of all proposed changes to chemicals, equipment, and procedures for a covered process to help ensure that the change does not negatively affect safe operations. Process changes that are determined to be a replacement in kind (e.g., replacing a valve with an identical valve) are allowed without completing a management of change form. All other changes must be reviewed through the management of change program. This ensures that inadvertent consequences of process changes are prevented, safety consequences of changes are addressed, affected process safety information and procedures are updated, and affected employees are notified of the changes.

7. Pre-startup Review: A safety review of a new or modified process is performed before the process is placed into service to help ensure that the process is safe to operate. This review confirms that an employee has completed the requisite training. The review also confirms that adequate safety, operating, maintenance, and emergency procedures are in place and that construction and equipment are in accordance with design specifications. A pre-startup review checklist is completed to document the review and to ensure that appropriate issues have been addressed.

8/9. Compliance Audit/Third Party Audit: Covered processes are audited to be certain that the prevention program is effectively addressing the safety issues for the covered processes. A third party auditor is contracted to verify compliance with the RMP rule. The auditor evaluates whether the prevention program satisfies the requirements of the RMP rule and whether the prevention program is sufficient to help ensure safe operation of the process. The results of the audit are documented, recommendations are resolved, and appropriate improvements to the prevention program are implemented.

10. Incident Investigation: An investigation is performed on incidents that could reasonably have resulted in a serious injury to personnel, the public, or the environment so that similar incidents can be prevented. Employees are trained to identify and report any incident requiring investigation. An investigation team is assembled, and the investigation is initiated within 48 hours of the incident. The results of the investigation are documented, recommendations are resolved, and appropriate process improvements are implemented.

11. Employee Participation: The Quinnesec Mill developed a written employee participation program for covered processes. This program helps ensure that employees participate in the development and continuous improvement of these prevention program elements. Employees are consulted on and informed about various aspects of the RMP rule prevention program, including PHAs and operating procedures, as well as access to information on the covered processes.

12. Hot Work Permits: The Quinnesec Mill uses a hot work permit program to control spark or flame producing activities that could result in fires or explosions in covered processes. The Hot Work Permit Form complies with OSHA's fire prevention and protection requirements in 29 CFR 1910.252(a). Personnel performing hot work are required to have an approved permit prior to beginning their work. Training in the use of the Hot Work Permit Form is included in the employee safe work practices orientation and refresher training is taken through computer based training periodically thereafter.

13. Contractors: Contractor Guidelines for Safety and Health outline expectations related to contractor work at the Quinnesec Mill including work on the covered processes. The program reviews the safety record of all contractors to help ensure that

only contractors who can safely perform the desired job tasks are hired. Contract supervisors and employees are informed of the hazards of the process on which they work, safe work practices, emergency response procedures, and utilizing a contractor work permit system. Contractors' training documents and work performance are periodically reviewed to help ensure that safe practices are followed.

1.3.2 Program 2 Prevention Program
The Quinnesec Mill has no processes which qualify for the Program 2 Prevention Program.

1.3.3 Chemical-specific Prevention Steps
In addition to the required prevention program elements, additional safety features specific to Chlorine Dioxide are described here;

Chlorine Dioxide gas is produced on-site in the generator and piped to a water absorption column, where a 1.2-1.3 wt % chlorine dioxide solution is generated. Chlorine dioxide is stored as a dilute water solution to minimize the potential for serious incident or off-site impact. The process is located almost entirely indoors, which further reduces the hazard. Storage tanks are engineered specifically for chlorine dioxide service. The process uses an advanced control system, with emergency shutdowns, to ensure safe operation. Containment sewers and curbing are provided to minimize the extent of potential leaks. Detectors and alarms provide continuous monitoring for chlorine dioxide in the event of a release, providing early detection and helping to ensure quick response if an incident were to occur.

1.4 Five-Year Accident History

During the five year period prior to July 2024 there were no reportable incidents. The Quinnesec Mill is committed to maintaining a high level of safety performance.

1.5 Emergency Response Programs

A written emergency response program has been established to help safely respond to accidental releases of hazardous substances. The emergency response plan includes procedures for:

- Clear identification of communication, roles and responsibilities during an emergency event.
- Informing the LEPC about accidental releases that could reasonably result in offsite consequences.
- Providing proper first aid and emergency medical treatment to treat accidental human exposure to hazardous substances.
- Controlling and containing accidental releases of hazardous substances, including the use of specially trained Hazardous Material Response Teams and emergency response equipment.
- Inspecting and maintaining emergency response equipment.
- Reviewing and updating the emergency response plan.

The Quinnesec Mill maintains an emergency response team trained in these emergency response procedures. All personnel are trained in evacuation procedures. Emergency response drills are conducted periodically. The written emergency response plan complies with other federal contingency plan regulations (e.g., the OSHA regulations 29 CFR 1910.38(a), 29 CFR 1910.120(a)) and has been communicated to local emergency response officials and local fire departments. The Quinnesec Mill maintains a regular dialogue with the local fire officials and provides response information, as appropriate.

1.6 Planned Changes to Improve Safety

The Quinnesec Mill constantly strives to improve the safety of the regulated processes by following recommended safe practices, soliciting safety suggestions from employees, conducting hazard analysis studies and investigating process incidents. One effort that is continually underway includes quarterly internal audits to identify changes that enhance reliability through engineering and/or administrative controls.

1.7 RMP Data Reporting to EPA

The Chlorine Dioxide system includes the generator, storage tanks, and distribution piping.

INSPECTION PROCEDURES

(1). MONTHLY INSPECTIONS

The MACT Rule Subpart S requires that closed vent systems (LVHC, HVLC, and Bleach Plant) and closed collection systems (foul condensate) are visually inspected once per calendar month (at least 21 days between inspections) to ensure system integrity is maintained[1]. The results of monthly inspections are entered electronically in E-Forms which are located on the Environmental Homepage of the Quinnesec Mill intranet (see LDAR-C for example Monthly Leak Detection and Repair and Inspection Forms for LVHC, HVLC, Bleach Plant, and Condensate Collection). Detailed below are the monthly inspection procedures for each system.

LVHC Closed Vent System

The LVHC Closed Vent System will be inspected once per calendar month (at least 21 days between inspections). Any visible defect or leak will be noted on the Inspection Form and proper repair procedures will be followed in accordance with Repair and Documentation Procedures outlined in this Section.

HVLC Closed Vent System

The HVLC Closed Vent System will be inspected once per calendar month (at least 21 days between inspections). Any visible defect or leak will be noted on the Inspection Form and proper repair procedures will be followed in accordance with Repair and Documentation Procedures outlined in this Section. Each washer hood (enclosure opening), and all other openings on the closed vent system will also be inspected for indications that the system is maintaining negative pressure (without any signs of puffing).

Bleach Plant Closed Vent System

The Bleach Plant Closed Vent System will be inspected once per calendar month (at least 21 days between inspections). Any visible defect or leak will be noted on the Inspection Form and proper repair procedures will be followed in accordance with Repair and Documentation Procedures outlined in this Section. Each washer hood (enclosure opening) and all other openings on the closed vent system will also be inspected to ensure that the system is maintaining negative pressure (without any signs of puffing).

[1] Per 10/26/2001 EPA Alternative Monitoring Request Approval.

Foul Condensate Closed Collection System

The Foul Condensate Closed Collection System will be inspected once per calendar month (at least 21 days between inspections)[2]. Any visible defect or leak will be noted on the Inspection Form and proper repair procedures will be followed in accordance with Documentation and Repair Procedures in this Section. Drains using a seal pot with a water seal to control air emissions must be inspected to verify that the appropriate liquid levels are being maintained and to identify any other defects that could reduce water seal control effectiveness. The mill will also inspect all unburied portions of the line for defects including visible cracks, holes, gaps, or other open spaces in the sewer line joints, seals, or other emission interfaces.

(2). ANNUAL TESTING

The MACT Rule Subpart S regulations require that the mill demonstrate initially and annually that each enclosure opening is maintained at negative pressure (as specified in 40 CFR 63.457(e)). The MACT Rule Subpart S regulations also require that positive pressure portions of LVHC and HVLC closed vent systems demonstrate "no detectable leaks" initially and annually in accordance with 40 CFR 63.453 and 63.457(d), which specifies the leak detection threshold of 500 ppm. Detailed below is the mill's annual testing program.

Negative Pressure Hood Enclosure Testing

The Quinnesec mill's HVLC and Bleaching systems include enclosures (washer hoods). All hoods must indicate negative pressure. Smoke tubes (or other approved instrumentation) will be used to demonstrate flow into the enclosure opening. A report will document the results of the testing for each point tested as well as any applicable supporting QA/QC information.

Positive Pressure (Method 21) Leak Testing

Positive pressure leak testing will be conducted on an annual basis on positive pressure portions of the HVLC and LVHC gas conveyance systems (see LDAR-A for Process Diagrams). Leak testing will also be conducted on the digester flash heat condensate tank and foul condensate collection tank as required in 40 CFR 63.453(l). To meet this requirement the mill will conduct leak testing according to the procedures in Method 21, Part 60, Appendix A. Method 21 testing will be conducted by a qualified contractor. The contractor will supply the mill with a report which documents the results of the testing for each point tested as well as supporting QA/QC information on the instrument capabilities for meeting the Performance Criteria specified in Method 21. Testing conducted by the qualified contractor will be documented with the use of a numbering system. Each component subject to Method 21 testing has been identified and labeled

[2] Per 10/26/2001 EPA Alternative Monitoring Request Approval.

in accordance with this numbering system. This numbering system will facilitate tracking of repairs when leaks and/or defects are identified.

Monthly inspection and annual testing documents will be kept on file for 5 years.

REPAIR PROCEDURES

An initial attempt to repair leaks/defects must be completed within five days with the final repair completed within 15 days. If the repair cannot be completed without a process unit shutdown, the repair may be delayed until the next process unit shutdown. If delayed, the repair MUST be completed during the next process unit shutdown.

Leaks or other defects identified and repaired as part of a monthly inspection and annual testing inspection will be tracked through the mill's maintenance work order system and/or contractor database system.

Monthly inspection and annual testing repair documents will be kept on file for 5 years.

Document Revisions

Date	Revision	Reviser
4/11/02	Original DMS version	
10/15/19	Specified location of LDAR electronic forms (E-Forms) on QuNet; Changed document owner to Katie Tomasoski; Renamed document consistent with LDAR Plan TOC; Added revisions table.	Paula LaFleur
11/4/20	Corrected document title	Paula LaFleur
3/14/23	Changed logo and document owner	Paula LaFleur
2/16/24	Changed document owner to Environmental, added review and revision dates.	Paula LaFleur
7/3/24	Changed QuNet to Quinnesec Mill intranet	Paula LaFleur
8/19/24	Added footnotes to reference EPA alternative monitoring approval. Revised Negative Pressure testing section by removing reference to contractor. There is no requirement that a contractor must perform this testing.	Paula LaFleur

Look for leaks/defects such as:

- Loose flanges
- Cracks or holes
- Rupture discs blown or leaking by
- Vents or drains not closed

If a defect or leak is found:

- Notify your shift manager immediately
- Check the D/L box
- Complete and attach a Leak Detection and Repair Report form

Process: (CVG) **LVHC** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the LVHC gas collection system in the Pulp Mill area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, and leaks such as caused by blown rupture disks, by-pass vents left open, loose nuts and bolts on piping or equipment. *The LVHC systems are under negative pressure from the flange connections to the intake of the CVG Blowers and under pressure after the blowers.*

Pulp Mill CVG System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L*	Initials
Digester Flash Heat Condenser	Begins at condenser vent line flange and ends at connection with line from digester flash condensate tank			
Digester Flash Condensate Tank	Begins at tank vent line flange and ends at the connection to the line from the foul condensate stripper in the R&U area			
Main CVG line and Switching valves	Begins with main CVG line through east lime kiln area wall (inspect all switching valves and lines in elevated platform area) and ends with main CVG line inlet flange to Limekiln			
CVG Line to Limekiln	Begins with the line from the switching valves to the Lime Kiln and ends with the inlet flange to the Limekiln			
Foul Methanol Storage Tank	Begins at the tank vent line flange and ends at the inlet flange to the Lime Kiln			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Process: **Bleach Plant** Closed Vent System Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the HVLC gas collection system in the Pulp Mill area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, and leaks such as caused by open washer doors, blown rupture disks, open by-pass vents, loose nuts and bolts on piping or equipment and inadequate seal water. *The Bleach Plant sources are under negative pressure from the flange connections to the control devices.*

Pulp Mill Bleach Plant System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L*	Initials
D100 Seal Tank	Begins at the tanks vent line flange connections and ends at the vent line inlet flange connection of the D100 scrubber			
D100 Washer	Begins at the washer hood interface (hood enclosure included) and ends at the vent line inlet flange connection of the D100 scrubber			
D1 and D2 Seal Tanks	Begins at the tanks vent line flange connections and ends at the vent line inlet flanges at the D1 and D2 system scrubber			
D100, D1 and D2 Towers	Begins at the tower vent line inlet flange and ends at the vent line inlet flange connection of the D1 and D2 system scrubber			
D1 and D2 Washers	Begins at the washer hoods interface (hood enclosures included) and ends at the vent line inlet flange connection of the D1 and D2 system scrubber.			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Process: (DVG) **HVLC** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the HVLC gas collection system in the Pulp Mill area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, and leaks such as caused by open washer doors, blown rupture disks, open by-pass vents, loose nuts and bolts on piping or equipment. *The HVLC systems are under negative pressure from the flange connections to the intake of the DVG Blowers and under pressure after the blowers.*

Pulp Mill DVG System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L*	Initials
# 1, 2 Brown Stock, and #1 POW Filtrate Tanks	Begins at tank vent line flanges, continue to 3rd floor and ends at the main DVG line connection			
#2 POW Filtrate tank, Washer Hood, and Blend Chest	Begins at the tank vent flanges to the hood flange connections and from the hood flange to the main DVG line connection			
PBW Filtrate Tank and Washer Hood	Begins at the tank vent flanges to the hood flange connections and from the hood flange to the main DVG line connection			
#1 & #2 BSW and #1 POW Washers	Begins at the hood flange and ends at the main DVG line connection			
O2 Delig Blow Tank	Begins at the O2 Blow Tank vent flange through the blower system and ends at the main DVG line connection			
Brown Stock HD Chest	Begins at the HD chest vent flange and ends at the main DVG line connection			
Hardwood Blow Tank	Begins at the Hard Wood Blow tank vent flange and ends at the main DVG line connection			
Chip Bin Vent Separator	Begins at the Chip Bin Vent Separator top flange and ends at the main DVG line connection			
DVG Fans, Cooler and Heater System	Begins at the inlet to the Entrainment Separator through the DVG fan, Cooler, Entrainment Separator, Booster Fan, Heater and ends at the last flange in the Pulp Mill Area.			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Process: **Foul Condensates** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the Foul Condensates Closed collection system in the R&U area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, condition of control valves and leaks such as caused by faulty pump packing, damaged or loose instrumentation connections, open by-pass lines, loose nuts and bolts on piping or equipment, defective control valves or packing, open drains and low levels in seal pots.

Pulp Mill Foul Condensate System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L*	Initials
Digester Flash Condensate Tank	Includes tank hatches, rupture disks, pressure reliefs and seal pot			
Digester Flash Heat Condenser	Begins at the condenser discharge line flange from the condenser condensate level tank and ends as it enters the R&U area			
CVG Blower Separator	Begins at the separator outlet flange and ends at the east wall before the R&U dept.			
DVG Foul Condensate Seal Pot	Begins at the outlet flange of the seal pot and ends where line enters the R&U area			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Look for leaks/defects such as:

- Loose flanges
- Cracks or holes
- Rupture discs blown or leaking by
- Vents or drains not closed

If a defect or leak is found:

- Notify your shift manager immediately
- Check the D/L box
- Complete and attach a Leak Detection and Repair Report form

Process: (CVG) **LVHC** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the LVHC gas collection system in the R&U area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, and leaks such as caused by blown rupture disks, by-pass vents left open, loose nuts and bolts on piping or equipment. *The LVHC systems are under negative pressure from the flange connections to the intake of the CVG Blowers and under pressure after the blowers.*

R&U CVG System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L *	Initials
Hotwell	Begins at the hotwell vent flange and ends at the main CVG suction line in the pipe rack			
Surface Condenser	Begins at the surface condenser outlet vent flange and ends at the main CVG suction line in the pipe rack			
Foul Condensate Storage Tank	Begins at the foul condensate storage tank vent flange and ends at the main CVG suction line in the pipe rack			
Stripper Separator	Begins at the stripper separator outlet vent flange and ends at the north wall of the stripper building			
Main CVG Suction Line	Begins at the north wall of the stripper building and ends at the wall on the 2nd floor at the entrance to the kiln			
CVG Line to WFB	Begins at the wall on the 2nd floor at the entrance to the kiln and ends at the inlet flanges to the north and south burners of the waste fuel boiler			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Process: (DVG) **HVLC** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the HVLC gas collection system in the R&U area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, and leaks such as caused by open by-pass vents or loose nuts and bolts on piping or equipment. *The HVLC systems are under negative pressure from the flange connections to the intake of the DVG Blowers and under pressure after the blowers.*

R&U DVG System Inspection

Date:_____ Operator: _____

Equipment:	Boundaries:	OK	D/L *	Initials
DVG line to WFB	Begins at the outlet flange of the DVG gas reheater and ends at the flange connection to the waste fuel boiler (includes main DVG vent 30HV259B)			
DVG line to Recovery Boiler	Begins at the "TEE" connection in the main DVG line and ends at the flange connection to the recovery boiler			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

Process: **Foul Condensates** Monthly Inspection *(must be at least 21 days from last inspection)*

Purpose: Identify any visible defects or leaks on the Foul Condensates Closed collection system in the R&U area.

Criteria: You are looking for defects such as: loose flanges, piping with cracks, holes or worn spots, condition of control valves and leaks such as caused by faulty pump packing, damaged or loose instrumentation connections, open by-pass lines, loose nuts and bolts on piping or equipment, defective control valves or packing, open drains and low levels in seal pots.

R&U Foul Condensate System Inspection

Date:_____ Operator:_____

Equipment:	Boundaries:	OK	D/L *	Initials
CVG Blower Separator to FC tank line	Begins at the wall on the 2nd floor entrance to the kiln area and ends at the inlet flange to the foul condensate storage tank			
Pulp Mill Flash Heat Condenser to FC tank	Begins in the pipe rack north of the R&U warm water pumps and ends at the inlet flange to the foul condensate storage tank			
Reboiler condensate to FC tank line	Begins at the bottom of the reboiler and ends at the inlet flange to the foul condensate storage tank			
Evaporator 5th effect to FC level tank line	Begins at the connection to the body of the 5th effect and ends at the inlet flange to the foul condensate level tank			
Surface Condenser to FC level tank line	Begins at the flange connections at the bottom of the surface condenser and ends at the inlet flange to the foul condensate level tank			
FC Level Tank to FC Storage Tank line	Includes the foul condensate level tank, connections, attachments and pumps and ends at the connection to the foul condensate storage tank			
DVG Foul Condensate Seal Pot to FC tank	Begins at the connection to the DVG foul condensate seal pot and ends at the connection to the foul condensate storage tank			
Foul Condensate Storage Tank	Includes tank hatches, rupture disks, pressure reliefs and seal pot			
Foul Condensate Tank Discharge Line	Begins at outlet flange from foul condensate storage tank and ends at the inlet flange to the fiber filters			

** If a defect or leak is found, check (D/L), Defect or Leak. If this is checked, a Leak Detection and Repair Report Form must be filled out.*

BILLERUD

ENVIRONMENTAL

Subject: LDAR-C-3 Leak Detection and Repair Report Form		**Page** 1 **of** 1 **Review Date: 2/17/24** **Revision Date: 2/17/24**
Effective: 3/12/2002	**Document Owner: Environmental**	

Once printed this is not a controlled document. All controlled documents exist in electronic form on the Mill web site.

Leak Detection and Repair Report Form

Department: Pulp Mill ( ) R&U ( )		
(Reporter's) Name:	Date defect or leak was found:	
Equipment No., type and identification:		
Describe the leak or defect:		
Describe the repair methods applied in each attempt to repair the leak or defect (first attempt is required within 5-days of discovery):		
First Attempt Date: W.O. #	Repair Methods:	Person performing repairs:
Second Attempt Date: W.O. #	Repair Methods:	Person performing repairs:
Third Attempt Date: W.O. #	Repair Methods:	Person performing repairs:
Fourth Attempt Date: W.O. #	Repair Methods:	Person performing repairs:
Reason for the delay if the leak or defect is not repaired within 15 days (i.e., mill shutdown required):		
Expected date of repair if the leak or defect is not repaired within 15 days?		
Date of successful repair:		Person performing repairs:

1. INTRODUCTION

This document identifies the Continuous Monitoring System (CMS) Quality Control Program the Quinnesec Mill follows to meet requirements of 40 CFR 63.8(d)(2), 40 CFR 63.453, and 40 CFR 63.864 of the Pulp and Paper NESHAP.

This program addresses the following requirements pursuant to 40 CFR 63(d)(2).

- Initial and subsequent calibration,
- Determination and adjustment of calibration drift,
- Preventative maintenance (including spare parts inventory),
- Data recording, calculations and reporting,
- Accuracy audits including sampling and analysis methods, and
- Correcting malfunctioning CMSs.

The following MACT regulated emitting units have CMS equipment that are covered under this program (See Appendix A for CMS equipment details):

- Bleaching System (40 CFR 63.445)
- Kraft Pulping Condensates (40 CFR 63.446)
- Recovery Furnace (40 CFR 63.862(A))
- Smelt Dissolving Tank (40 CFR 63.862(A))
- Lime Kiln (40 CFR 63.862(C))

The intent of this plan is to define CMS quality control practices and provide a means of communicating expectations to mill personnel that ensure continued compliance. Generally speaking, this plan defines those activities performed to ensure CMS equipment is providing accurate process information.

2. CMS QUALITY CONTROL ACTIVITIES

Oversight of Activities

- Maintenance personnel are under the direction of the area maintenance supervisor for inspection, maintenance and repair.

- Inspection, maintenance and repair of CMS equipment within the mill is performed by qualified mill employees or contract personnel only.

Identification of Equipment

- CMS equipment is provided with an identification number that minimizes potential for error to occur when performing maintenance.
- CMS equipment is provided with field tags to ensure proper field identification of the equipment when maintenance tasks are performed.
- CMS equipment is identified in the mill maintenance computer system to provide a means of maintaining schedules and records of preventive maintenance practices.
- Spare parts for CMS equipment are identified in the mill maintenance computer system according to the equipment number to ensure proper inventory of spare parts are maintained on site.
- Documentation for various CMS equipment calibration and range settings are identified on loop sheets or specifications sheets carrying the same identifier as the equipment.

Calibration and Maintenance Practices

- Initial calibration of CMS equipment was performed during installation and setup.
- Test and calibration intervals along with drift adjustment determinations have been chosen using best judgment based on previous application experience and/or manufactures recommendation, considering component type and service characteristics, but should not exceed 1 year (See Appendix A for CMS Specifications and Maintenance Schedule).
- CMS equipment that cannot be practically calibrated (i.e., mag. tube flow meters) will be inspected on a periodic basis to ensure their continued operation.
- COMS equipment calibration and drift determination is performed in accordance with requirements detailed in 40 CFR Part 60 Appendix F and the Quinnesec Mill CEMS Quality Control Program.
- The mill employs both predictive and preventative maintenance practices to minimize the potential for a malfunction to occur.
- Maintenance, calibration and testing are to be scheduled and performed in a manner that does not create an unsafe condition in the process, or result in a permit exceedance.

- Maintenance records are maintained in the mill's computer database systems.

- Records of calibration and tests shall include:
  - Inspectors name
  - Date performed
  - As found/as left condition (calibration), or general condition (satisfactory or deficiencies)
  - Corrective maintenance performed

- Maintenance records are reviewed periodically for completeness and accuracy.

- Maintenance records are maintained on-site for a minimum of (5) five years.

Data Recording, Calculations, and Reporting

- A computer-based system (Proficy) is used to record and report CMS information. The data link from the CMS's to Proficy is monitored continuously to insure that proper communication is taking place (CMS Record keeping & Reporting System information is included in Appendix B).

- The Proficy computer system is capable of providing a number of summary and detailed reports for regulatory submittal as required by 40 CFR 63.6(e)(iii); 63.10(b); 63.10(d)(5)(i); 63.10(e).

- More detailed information regarding recordkeeping and reporting can be found in section SSM – 4 of the SSM plan (See Proficy Design documents in Appendix F of SSM Plan for detailed CMS calculation information.).

Accuracy Audits

- For completeness and accuracy of CMS and COMS data the following Accuracy Audits are conducted:
  - Routine review of CMS and COMS operations through computer display trending
  - Review of record keeping systems (Proficy database)
  - Routine review of CMS and COMS calibrations and quality assurance activities

Correcting Malfunctioning CMSs

- Operating personnel have primary responsibility to ensure CMS equipment is operating properly.

- Maintenance is responsible for providing prompt response in the event of CMS malfunction. All reasonable efforts are taken to restore the CMS monitoring equipment to normal status. If the servicing must be performed under operating conditions, work should be scheduled to minimize the amount of time a device is off line.

- Operator actions taken during an excess emission or CMS malfunction event are tracked by the Proficy computer system (corrective actions for excess emission events and for malfunctioning CMS events are detailed in the mill's Startup, Shutdown, and Malfunction Plan).

3. RESPONSIBLITIES

- Maintenance is responsible to ensure proper scheduling and completion of maintenance, repair, calibration and tests.

- Maintenance is responsible for ensuring records are retained for equipment maintenance.

- Operating departments are responsible for providing appropriate access to conduct necessary equipment maintenance, including scheduling of outages.

- Information Technology department is responsible for maintenance of the Proficy system.

- Environmental Department is responsible for CMS compliance reports.

APPENDIX A – CMS Specification and Maintenance Schedule

Bleach Plant

CMS	Location	Manufacturer/ Model No./ Equipment No.	Accuracy (Manufacturer's Spec.)	Calibration /Inspection Frequency	Daily Indicator of CMS Response	Zero & Span Drift Limit	Point of Corrective Action (for drift)
Flow meter (3)	D100 scrubber recirculation line, D1/D2 scrubber recirculation lines	Rosemount/ 8712 Eq. No. D100 – 48FT316 Calibrated range: 0-100 GPM D1/D2 North – 48FT314 Calibrated range: 0-100 GPM D1/D2 South – 48FT315 Calibrated range: 0-150 GPM	In accordance with Manufactures specifications ± 0.25% of rate	Annually	DCS/PI/Proficy watchdog timer	± 2%	± 2%
pH meter (2) *Backup:* grab sample	D100 scrubber effluent, D1/D2 scrubber effluent	ABB/TB82 Eq. No. D100 – 48AT311 D1/D2 – 48AT310	In accordance with Manufactures specifications ± 0.01 pH units	Biweekly	DCS/PI/Proficy watchdog timer	In accordance with Manufactures specifications, or previous application experience	In accordance with Manufactures specifications, or previous application experience
Fan speed (2) Switch	D100 scrubber fan, D1/D2 scrubber fan	AI-Tek/ 70085-1010-002/001 Eq. No. D100 – 48SS022 D1/D2 – 48SS021	In accordance with Manufactures specifications ± 0.1%	Annually	DCS/PI/Proficy watchdog timer	On/Off	On/Off

APPENDIX A – CMS Specification and Maintenance Schedule

Condensate Collection and Treatment

CMS	Location	Manufacturer/Model No. /Equipment No.	Accuracy (Manufacturer's Spec.)	Calibration/ Frequency Calibration	Daily Indicator of CMS Response	Zero & Span Drift Limit	Point of Corrective Action (for drift)
Flow meter	Condensate collection tank pump discharge	Rosemount/ 1151DP5E22B3 Eq. No. 30FI096 Calibrated range: 0-400 GPM	In accordance with manufactures specifications (± 0.2% of calibrated span)	Annual	DCS/PI/Proficy watchdog timer	± 4%	± 4%
Pulp flow meter	Inlet to No. 1 post O2 washer	Krohne SC100LD Eq. No. 42FT217 Calibrated range: 0-6000 GPM	In accordance with manufactures specifications	Annual	DCS/PI/Proficy watchdog timer	± 3%	± 3%
Pulp consistency meter	Inlet to No. 1 post O2 washer	Valmet Pulp EL/ LS2W Eq. No. 42CT1215 Calibrated range: 2.5-5% consistency	In accordance with manufactures specifications (0.02% consistency)	Annual	DCS/PI/Proficy watchdog timer	± 4%	± 4%
Steam flow meter	Steam Stripper	Rosemount/ 1151DP4E22B3 Eq. No. 30FI145 Calibrated range: 0-25 klb/hr	In accordance with manufactures specifications (± 0.2% of calibrated span)	Annual	DCS/PI/Proficy watchdog timer	± 5%	± 5%
Condensate temperature meter	Steam Stripper	Foxboro/PR1US065WLTTA 22 Eq. No. 30TI099A Instr. Range: -330 – 1100 F	In accordance with manufactures specifications (±0.25 + 0.0042(T)°C, where T = °C temperature, absolute value)	Annual	DCS/PI/Proficy watchdog timer	In accordance with manufactures specifications, or previous application experience	In accordance with manufactures specifications, or previous application experience

APPENDIX A – CMS Specification and Maintenance Schedule

Lime Kiln

CMS	Location	Manufacturer/ Model No./ Equipment No.	Accuracy *(Manufacturer's Spec.)*	Calibration /Inspection Frequency	Daily Indicator of CMS Response	Zero & Span Drift Limit	Point of Corrective Action (for drift)
Flow Meters (2)	Venturi scrubber recirculation line	Rosemount/ 8712 Eq. No. 45FT079 Calibrated range: 0-1800 GPM	In accordance with 40 CFR 63.864 (e)(10)(ii) - +/-5% accuracy per rule *(± 0.25% of rate)*	Annually	DCS/PI/Proficy watchdog timer	± 4%	± 4%
	Makeup water to scrubber nozzles	Rosemount/ 3051 Eq. No. 45FT074 Calibrated range: 0-250 GPM	In accordance with 40 CFR 63.864 (e)(10)(ii) - +/-5% accuracy per rule *(± 0.25% of rate)*	Annually	DCS/PI/Proficy watchdog timer	± 4%	± 4%
Differential pressure guage (2)	Venturi scrubber body	Rosemount/ 3051 Eq. No. Inlet - 44PT077A Calibrated range = 0-75" Outlet – 45PT077B Calibrated range = 0-20"	In accordance with 40 CFR 63.864 (e)(10)(i) - +/- 2 inches H2O accuracy per rule *(±0.035% of span)*	Annually	DCS/PI/Proficy watchdog timer	± 5%	± 5%

Recovery Furnace

CMS	Location	Manufacturer/ Model No./ Equipment No.	Accuracy *(Manufacturer's Spec.)*	Calibration/ Inspection Frequency	Daily Indicator of CMS Response	Zero & Span Drift Limit	Point of Corrective Action (for drift)
Opacity monitor	Recovery furnace flue gas breeching	SICK/Dusthunter T200 Eq. No. 44AI210	In accordance with Appendix B Performance Specification 1, and Appendix F Procedure 3 *(± 2%)*	Daily, Quarterly and Annual – In accordance with 40 CFR 60 Appendix F, Procedure 3	VIM/DCS/PI/Proficy watchdog timer, VIM CEMLink 6	In accordance with 40 CFR 60 Appendix F (twice the Appendix B PS-1 calibration drift limit of 2%)	In accordance with 40 CFR 60 Appendix F

APPENDIX A – CMS Specification and Maintenance Schedule

Smelt Dissolving Tank

CMS	Location	Manufacturer/ Model No./ Equipment No.	Accuracy *(Manufacturer's Spec.)*	Calibration /Inspection Frequency	Daily Indicator of CMS Response	Zero & Span Drift Limit	Point of Corrective Action (for drift)
Flow meter (2)	Scrubber liquid feed line	Rosemount/ 8712/8705 Eq. No. East – 44FI598 Calibrated range: 0-400 GPM West – 44FI597 Calibrated range: 0-400 GPM	In accordance with 40 CFR 63.864 (e)(10)(ii) - +/-5% accuracy per rule *(± 0.25% of rate)*	Annually	DCS/PI/Proficy watchdog timer	± 4%	± 4%
Fan amps	Scrubber fan motor	Rochester Instruments Systems/ CCC-1B-C5-XA-F60-Z0-A1-G0 Eq. No. 44M00015	In accordance with Manufactures specifications *(± 0.20% of rated output)*	Anuually	DCS/PI/Proficy watchdog timer	In accordance with Manufactures specifications, or previous application experience	In accordance with Manufactures specifications, or previous application experience

APPENDIX B - CMS Record Keeping & Reporting System

Bleach Plant

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)	Good data quality is defined as …	Data Record Location	Frequency of Data Collection	Data Averaging Period	Daily Indicator of PI/Proficy System Response
Flow meter	Failure to meet 50% good data quality for each 15 minute period while the source is operating: ▪ Creates 15 minute CMS downtime event.	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	15 minutes	DCS/PI/Proficy watchdog timer
pH meter *backup:* grab sample	Failure to meet 50% good data quality for each 15 minute period while the source is operating (w/o backup): ▪ Creates 15 minute CMS downtime event.	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	15 minutes	
Fan speed	Failure to operate within range during source operating time: ▪ Creates instantaneous CMS downtime event.	Instrument reading is within the range of the instrument	Proficy	Once per minute	instantaneous	

APPENDIX B - CMS Recordkeeping & Reporting System

Condensate Collection and Treatment

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)*	Good data quality is defined as …	Data Record Location	Frequency of Data Collection	Data Averaging Period	Daily Indicator of PI/Proficy System Response
Flow meter	Failure to meet 80% good data quality per source operating time (w/o backup): ▪ Creates 24 hr CMS downtime event (manually generated event), ▪ Omits day from 15-day average calculation.	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	Daily totalizer	DCS/PI/Proficy watchdog timer
Pulp consistency meter	Failure to meet 80% good data quality per source operating time (w/o backup): ▪ Creates 24 hr CMS downtime event (manually generated event), ▪ Omits day from 15-day average calculation.	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	Daily totalizer	
Pulp flow meter	Failure to meet 80% good data quality per source operating time (w/o backup): ▪ Creates 24 hr CMS downtime event (manually generated event), ▪ Omits day from 15-day average calculation.	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	Daily totalizer	
Steam flow meter	Failure to meet 80% good data quality per source operating time (w/o backup): ▪ Creates CMS downtime event	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	Continuous	
Condensate temperature meter	Failure to meet 80% good data quality per source operating time (w/o backup): ▪ Creates CMS downtime event	Instrument reading is within the range of the instrument, +/- the drift tolerance of the device, or the standard deviation of the raw tag for the past 3-hrs is greater than zero.	Proficy	Once per minute	Continuous	

* When two or more CMS devices fail on the same 24 hr period, only one (1) day of CMS downtime is recorded. The determination of which device to assign the CMS downtime to is a manual input.

APPENDIX B - CMS Recordkeeping & Reporting System

SDT Scrubber and Lime Kiln Scrubber Flow Meters

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)	Data Record Location	Frequency of Data Collection and Averaging Period	Daily Indicator of System Response
Magnetic flow meter	Failure to obtain at least 4 data points in an hour while the source is operating, except for those conditions where two data points are acceptable, i.e.: 1) During calibration, QA, or maintenance activities or; 2) The source operates for less than one hour following the PTE criteria for a 1-hour average. ▪ Creates 1 hr CMS downtime event	Proficy	Compute 15 min, 1-hour and 3-hour averages **15-min. average** Obtain at least one valid data point during each 15-minute block period during the source operating time. **1-hour average** A valid hourly average must have at least 4 equally spaced values for the hour. The one-hour average may be computed from less than four-15 minute values if the source operations for less than an hour. **3-hour average** Compute 3-hour rolling average as the arithmetic average of the previous 3 operating hours.	DCS/PI/Proficy watchdog timer

APPENDIX B - CMS Recordkeeping & Reporting System

Lime Kiln Scrubber Differential Pressure Gauges

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)	Data Record Location	Frequency of Data Collection and Averaging Period	Daily Indicator of CMS System Response
Differential Pressure Gauge	Failure to obtain at least 4 data points in an hour while the source is operating, except for those conditions where two data points are acceptable, i.e.: 1) during calibration, QA, or maintenance activities or 2) the source operates for less than one hour following the PTE criteria for a 1-hour average. ▪ Creates 1 hr CMS downtime event	Proficy	Compute 15 min, 1-hour and 3-hour averages **15-min. average** Obtain at least one valid data point during each 15-minute block period during the source operating time. **1-hour average** A valid hourly average must have at least 4 equally spaced values for the hour. The one-hour average may be computed from less than four-15 minute values if the source operations for less than an hour. **3-hour average** Compute 3-hour rolling average as the arithmetic average of the previous 3 operating hours.	DCS/PI/Proficy watchdog timer

APPENDIX B - CMS Recordkeeping & Reporting System

Smelt Dissolving Tank Scrubber Fan Amperage Guage

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)	Data Record Location	Frequency of Data Collection and Averaging Period	Daily Indicator of CMS System Response
Fan Amperage Gauge	Failure to obtain at least 4 data points in an hour while the source is operating, except for those conditions where two data points are acceptable, i.e.: 1) during calibration, QA, or maintenance activities or 2) the source operates for less than one hour following the PTE criteria for a 1-hour average. ▪ Creates 1 hr CMS downtime event	Proficy	Compute 15 min, 1-hour and 3-hour averages **15-min. average** Obtain at least one valid data point during each 15-minute block period during the source operating time. **1-hour average** A valid hourly average must have at least 4 equally spaced values for the hour. The one-hour average may be computed from less than four-15 minute values if the source operations for less than an hour. **3-hour average** Compute 3-hour rolling average as the arithmetic average of the previous 3 operating hours.	DCS/PI/Proficy watchdog timer

APPENDIX B - CMS Recordkeeping & Reporting System

Recovery Furnace Opacity Monitor

CMS	CMS Downtime Event (automatically generated by Proficy unless otherwise indicated)*	Data Record Location	Frequency of Data Collection and Averaging Period	Daily Indicator of CMS System Response
Opacity Monitor	Failure to obtain a 6-minute opacity value from the COMS DAS while the source is operating. This will be recorded as 6-minute CMS downtime event by the COM DAS or other intermediate device. The zero or span daily drift is two times the calibration drift (CD) referenced in the applicable performance specification (i.e., daily drift is $\geq$ 4%) which equates to the COMS being out-of-control while the source is operating. Downtime will be equivalent to the time the source is considered out-of-control. *Failure of any quarterly QA/QC test i.e., optical alignment, zero compensation, calibration error would be considered CMS downtime since the last test was passed. *Failure of annual zero alignment will be considered out-of –control and CMS downtime since the last test was passed.	Proficy, VIM CEMLink 6	Each 10-seconds Discreet 6-minutes Calculate average from 36 or more data points equally spaced over a 6-minute period	DCS/PI/Proficy watchdog timer, VIM CEMLink 6

Revisions History

Date	Section/Page	Revision	Reviser
10/16/17	Appendix A	Updated instrumentation manufacturer and model information; added manufacturer's accuracy specifications, zero and span drift limits, point of corrective action values.	P. LaFleur
4/23/19	Appendix A/ pp. 7-8	Changed regulatory citations to match rule-revision citation changes for scrubber flow and pressure CMS (LK and SDT)	P. LaFleur
3/12/20	Data Recording, Calculations, and Reporting section	Corrected typo under third bullet of Data Recording, Calculations, and Reporting section: "reporting and reporting" changed to "recordkeeping and reporting".	P. LaFleur
7/30/20	Appendix A Bleach Plant table	Corrected D1/D2 scrubber flow transmitter tag numbers – north and south were reversed	P. LaFleur
6/9/21	Appendix A & B, Recovery Furnace Opacity	Added VIM CemLink6 as an additional location for daily indicator of CMS response and data record location.	P. LaFleur
6/16/21	Appendix A – Lime Kiln CMS and Maintenance Schedule Table	Added new, additional flow meter 44FT074 to CMS table.	P. LaFleur
1/4/24	Appendix A – Bleach Plant Scrubber pH Maintenance Schedule Table	Calibration/Inspection Frequency changed from weekly to biweekly. This is consistent with the manufacturer's recommended maintenance and facility operational performance.	P. LaFleur

Boiler MACT Site-Specific Monitoring Plan

Billerud Quinnesec LLC
W-6791 US Highway 2
Quinnesec, MI 49876

Effective November 2015

Revision Date: 4/24/23
Review Date 2/1/2024

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1. PURPOSE

Billerud Quinnesec LLC (Billerud) is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD). This regulation is commonly referred to as the Boiler MACT. 40 CFR §63.7505(d) requires the development and implementation of a Site-Specific Monitoring Plan (SSMP) if compliance with an applicable emissions limit is demonstrated through performance testing or a Continuous Emissions Monitoring System (CEMS), and compliance with an applicable operating limit is demonstrated through the use of a Continuous Parametric Monitoring Systems (CPMS) or a Continuous Opacity Monitoring System (COMS). CEMS, CPMS, and COMS are collectively referred to as Continuous Monitoring Systems (CMS). An SSMP must be prepared according to the requirements in 40 CFR §§63.7505(d)(1) through (4), as well as certain requirements in 40 CFR §§63.8(c) and (d), and 40 CFR §§63.10(c) and (e), for the use of a CMS. This requirement also applies if Billerud petitions the U.S. Environmental Protection Agency (U.S. EPA) in accordance with 40 CFR §63.8(f) for alternative monitoring system quality assurance (QA) and quality control (QC) procedures in place of those specified in 40 CFR §63.7505(d).

Billerud must submit this SSMP, if requested, at least 60 days prior to conducting the initial performance evaluation of its CMS. Otherwise, Billerud must maintain this SSMP on site and make it available upon request for inspection.

As specified in 40 CFR §63.7505(d)(1), the requirement to develop, and submit upon request, an SSMP does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under Appendix B to 40 CFR Part 60 and that meet the requirements of 40 CFR §63.7525. Billerud's COMS meets the criteria in 40 CFR §63.7505(d)(1) and Billerud operates and maintains its COMS in accordance with its existing QA/QC Plan. Furthermore, to date, U.S. EPA has not promulgated performance specifications for CPMS (i.e., pressure monitors, scrubber flow meters, or steam flow meters) of the type used for Subpart DDDDD compliance.

Therefore, Billerud has relied on manufacturer's specifications, Mill standard operating procedures, standard industry practices, and U.S. EPA guidance[1] for the purposes of this SSMP.

This SSMP was developed in accordance with the version of Subpart DDDDD in effect as of the date of the document. Revisions to Subpart DDDDD in the future may require an update to this plan. Revisions of this plan are documented in Section 11 of this document.

1.1 MILL DESCRIPTION

The Quinnesec Mill is a bleached kraft pulp and paper mill that produces coated paper. The Quinnesec Mill is located in Dickinson County, Michigan. The Quinnesec Mill includes the following general process operations: woodyard, kraft pulp mill, chemical recovery, recausticizing system, bleach plant, boilerhouse, and coated paper manufacturing operations.

The Quinnesec Mill uses two (2) power boilers to produce steam to drive turbines for electricity generation for internal mill use, and to provide steam and/or heat for the pulping and paper making processes.

1.2 OVERVIEW OF BOILER MACT AFFECTED UNITS

Billerud operates the following two (2) boilers that are affected emissions units under Boiler MACT:

1. Package Boiler (PB)
2. Waste Fuel Boiler (WFB)

The following subsections describe the affected emissions units.

1.2.1 Package Boiler (PB)

The PB was installed in 1989 and has a nominal rated heat input capacity of 419 million British thermal units per hour (MMBtu/hr). The PB is designed to combust natural gas and is equipped with an oxygen (O_2) trim system to maintain excess air at the desired level in the boiler.

[1] http://www.epa.gov/ttnatw01/pulp/dps53101.pdf.

The PB is an existing source with respect to Boiler MACT, and it meets the criteria of the ***unit designed to burn gas 1*** subcategory. As such, PB is not subject to emissions limits or operating limits under Boiler MACT and is not addressed further in this SSMP.

1.2.2 Waste Fuel Boiler (WFB)

The WFB was installed in 1981 and has a nominal rated heat input capacity of 660 MMBtu/hr. The WFB burns biomass [wood fuel], coal, and natural gas. The WFB is equipped with a multi-clone and a dry electrostatic precipitator (ESP), as well as a COMS. The WFB includes an OFA system along with an O_2 trim system to maintain excess air at the desired levels in the boiler.

The WFB is an existing source with respect to Boiler MACT, and it meets the criteria of the ***unit in all categories designed to burn solid fuel*** subcategory and the ***stokers/sloped grate/others designed to burn wet biomass fuel*** subcategory.

1.3 SSMP DESCRIPTION

The purpose of this SSMP is to address the installation, performance, operation and maintenance, quality control, and recordkeeping and reporting procedures related to the Mill's CMS. In addition to the regulatory requirements, this document also identifies the roles and responsibilities for Billerud personnel related to implementing this SSMP, and documents the periodic reviews, updates, and other revisions to the SSMP. In accordance with 40 CFR §63.7505(d)(1), Billerud has developed this SSMP which addresses the design, data collection, and the QA/QC procedures for each CMS required by Boiler MACT. Specific regulatory requirements and their location in the SSMP are provided in Table 1.1.

Table 1-1
Location of Boiler MACT SSMP Requirements within This Document

SSMP Requirements and Items to Address	Regulatory Citation (40 CFR)	Section in SSMP
Initial and subsequent calibrations	§63.8(d)(2)(i)	6-1
Determination and adjustment of calibration drift	§63.8(d)(2)(ii)	8
Preventative maintenance, including spare parts inventory	§63.8(d)(2)(iii)	8
Data recording, calculations, and reporting	§63.8(d)(2)(iv)	7
Accuracy audit procedures, including sampling and analysis methods	§63.8(d)(2)(v)	6
Program for corrective action for malfunctioning CMS	§63.8(d)(2)(vi)	9
Installation of CMS sampling probe	§63.7505(d)(1)(i)	4
Performance and equipment specifications for sample interface, pollutant concentration, or parametric signal analyzer	§63.7505(d)(1)(ii)	5-1
Performance evaluation procedures and acceptance criteria	§63.7505(d)(1)(iii) §63.8(e)	6
Ongoing operation and maintenance	§63.7505(d)(2)(i)	8
Keep parts for routine repair of CMS readily available	§63.8(c)(1)(ii)	8
CMS must be installed, operational, and data verified	§63.8(c)(3)	4 & 6
One (1) cycle of operation (sampling, analyzing, and data recording) must be completed each successive 15-minute period for each CEMS	§63.8(c)(4)	7
One (1) cycle of sampling and analyzing for each successive 10-second period and one (1) cycle of data recording for each successive six (6) minute period for each COMS	§63.8(c)(4)(i)	7
Reduce all data to six (6)-minute averages for each COMS	§63.8(g)(2)	7
Data QA procedures	§63.7505(d)(2)(ii)	6
Recordkeeping and reporting procedures	§63.7505(d)(2)(iii)	10
Performance evaluation of each CMS	§63.7505(d)(3)	6
Each CMS be operated and maintained according to SSMP	§63.7505(d)(4)	1

2. RESPONSIBILITIES

Table 2-1 identifies the designated responsible person (by title) for the elements and requirements within EPC's SSMP.

Table 2-1
List of Responsibilities

Requirement	Responsible Person(s)	Section in SSMP
Installation requirements	Electrical Engineer/Maintenance E&I	4
Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system	Electrical Engineer/Maintenance E&I/Process Control/IT	5
CMS calibrations/QA	Maintenance E&I/Central Lab	6
CMS calibration recordkeeping	Maintenance E&I	10
CMS spare parts	Maintenance E&I	8
Determining CMS "out-of-control" periods	Environmental	6
Recordkeeping for CMS "out-of-control" periods and CMS "down time"	Environmental	10
CMS preventative maintenance	Maintenance	8
CMS preventative maintenance recordkeeping	Maintenance	10
CMS data recording and calculations	Environmental	7
Corrective actions for CMS	Maintenance	9
CMS monitoring data recordkeeping	Environmental	10
CMS reporting (per the SSMP)	Environmental	10

3. DEFINITIONS

The following definitions from 40 CFR §§63.2 and 63.7575 are provided for reference:

- *30-day rolling average* means the arithmetic mean of the previous 720 hours of valid operating data. Valid data exclude hours during startup and shutdown, data collected during periods when the monitoring system is out of control as specified in your SSMP, while conducting repairs associated with periods when the monitoring system is out of control, or while conducting required monitoring system quality assurance or quality control activities, and periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent.
- *Boiler* means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in 40 CFR §241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers are excluded from this definition.
- *CEMS* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of emissions.
- *CMS* is a comprehensive term that may include, but is not limited to, CEMS, COMS, CPMS, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by the regulation.
- *COMS* means a continuous monitoring system that measures the opacity of emissions.
- *CPMS* means the total equipment that may be required to meet the data acquisition and availability requirements of this part, used to sample, condition (if applicable), analyze, and provide a record of process or control system parameters.
- *Corrective actions* means an activity performed in response to failed quality assurance activity by a CEMS and/or CMS.

- *Daily block average* means the arithmetic mean of all valid emissions concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime.
- *Deviation:*
  (i) Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:
    (1) Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emissions limit, operating limit, or work practice standard; or
    (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.
  (ii) A deviation is not always a violation.
- *Excess emissions* occur if a valid quality assured opacity reading exceeds the numerical emissions limit pursuant to 40 CFR Part 63, Subpart DDDDD consistent with the averaging period or if valid quality assured data from a performance evaluation result in emissions above the specific numerical emissions limit for a pollutant (PM, CO, HCl, and/or Hg) pursuant to 40 CFR Part 63, Subpart DDDDD consistent with the averaging period by using a specified U.S. EPA reference method.
- *Exceedances* occur when valid quality assured parametric monitor values exceed limits pursuant to 40 CFR Part 63, Subpart DDDDD consistent with the averaging period.
- *Hourly average* means the arithmetic average of at least four (4) CMS data values representing the four (4) 15-minute periods in an hour, or at least two (2) 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.
- *Hybrid suspension grate boiler* means a boiler designed with air distributors to spread the fuel material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40% on an as-fired annual heat input basis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch

oven, and pile burner designs are not part of the hybrid suspension grate boiler design category.

- *Malfunction* means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emissions limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- *Oxygen analyzer system* means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate locations. This definition includes oxygen trim systems. The source owner or operator must install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.
- *Oxygen trim system* means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or carbon monoxide CO monitor that automatically provides a feedback signal to the combustion air controller.
- *Performance evaluation* means the conduct of relative accuracy testing, calibration error testing, and other measurements used in validating the CMS data.
- *Performance test* means the collection of data resulting from the execution of a test method [usually three (3) emission test runs] used to demonstrate compliance with a relevant emissions standard as specified in the performance test section of the relevant standard.
- *Shutdown* means the cessation of operation of a boiler or process heater for any purpose. Shutdown begins either when none of the steam from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler or process heater, whichever is earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler or process heater.[2]

[2] U.S. EPA is proposing to revise the definition of shutdown per the proposed reconsideration of Boiler MACT for major sources (80 FR 3090). U.S. EPA is proposing to clarify that shutdown begins when the boiler or process heater no longer makes useful thermal energy and ends when the boiler or process heater no longer makes useful thermal energy and no fuel is fired in the boiler or process heater. The SSMP will be modified as needed based on amendments to Subpart DDDDD, if any, due to the proposed rule.

- *Solid fossil fuel* includes, but is not limited to, coal, coke, petroleum coke, and tire derived fuel.
- *Solid fuel* means any solid fossil fuel or biomass or bio-based solid fuel.
- *Startup* means either the first-ever firing of fuel in a boiler or process heater for the purpose of supplying steam or heat for heating and/or producing electricity, or for any other purpose, or thee firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the stream or heat from the boiler or process heater is supplied for heating, and/or producing electricity, or for any other purpose.[3]
- *Unit designed to burn biomass/bio-based solid category* includes any boiler or process heater that burns at least 10% biomass or bio-based solids on an annual heat input basis in combination with solid fossil fuels, liquid fuels, or gaseous fuels.
- *Unit designed to burn gas 1 subcategory* includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration are also included in this definition.
- *Unit designed to burn solid fuel subcategory* means any boiler or process heater that burns only solid fuels or at least 10% solid fuel on an annual heat input basis in combination with liquid fuels or gaseous fuels.

[3] U.S. EPA is proposing to add an alternate definition to the definition of startup per the proposed reconsideration of Boiler MACT for major sources (80 FR 3090). The alternate definition of startup will clarify that, in terms of the first-ever firing of fuel, startup begins when fuel is fired for the purpose of supplying useful thermal energy (such as steam or heat) for heating, process, cooling, and/or producing electricity. It will also clarify that startup ends four (4) hours after when the boiler or process heater makes useful thermal energy. The SSMP will be modified as needed based on amendments to Subpart DDDDD, if any, due to the proposed rule.

4. AFFECTED SOURCES AND CMS

4.1 WFB

Table 4-1 summarizes the applicable Boiler MACT emissions limits and operating parameters associated with the WFB.

Table 4-1

WFB Summary of Applicable Emissions Limits and Operating Parameter

Pollutant	Emissions Limit	Control Device	Operating Parameter
Filterable PM	0.034 lb/MMBtu heat input	Multi-Cyclone, Dry ESP	Opacity
CO	1,100 ppmvd @ 3% O_2[(a),(b)]	N/A	O_2 Trim
Hg	5.4E-06 lb/MMBtu heat input	Multi-Cyclone, Dry ESP	Hg input loading to boiler
HCl	2.0E-02 lb/MMBtu heat input	N/A	HCl input loading to boiler
All	N/A	N/A	Operating Load (steam flow)

(a) Emissions limits for filterable PM and CO are for boilers under the subcategory of stoker/sloped grate/others designed to burn wet biomass fuel
(b) Parts per million by volume, dry basis, corrected to 3% O_2 concentration.

The applicable operating limits and compliance methodology for each parameter are summarized below in Table 4-2. Operating limits are set through initial performance testing and can be modified based on subsequent testing.

Table 4-2
WFB Summary of Operating Limits

Parameter	Compliance Methodology[(a)]	Operating Limit[(b)]
Opacity	Conduct initial and annual performance testing for filterable PM. Maintain opacity to less than or equal to 10% (daily block average)	≤10%

Parameter	Compliance Methodology[a]	Operating Limit[b]
O_2 Content[c]	Conduct initial and annual performance testing for CO. Operate the O_2 trim system set no lower than the lowest hourly average O_2 concentration measured during the most recent CO performance test.	At or above the set point established during the most recent performance test
Operating Load	Conduct initial and annual performance testing for filterable PM, CO, Hg, and HCl. Maintain the operating load such that the 30-day rolling average steam flow rate does not exceed 110% of the highest hourly average operating load recorded during the most recent performance test.	Not to exceed the level established during the most recent performance test

(a) Per Boiler MACT, if your performance tests for a given pollutant for at least two (2) consecutive years show that your emissions are at or below 75% of the emissions limit for the pollutant, and if there are no changes in the operation of the individual boiler or air pollution control equipment that could increase emissions, performance test frequency for the pollutant may be decreased to once every three (3) years.
(b) The most recent performance tests can be found in at the location referenced in Appendix A.
(c) Boiler MACT does not specifically address O_2 trim system range requirements. Billerud will assign the set point based on performance testing.

Table 4-6 summarizes the monitoring equipment used by the WFB covered by this SSMP.

Table 4-3
WFB Summary of Boiler MACT CMS

Equipment	Location	Manufacturer	Model	Measurement	Data Collection Method
COMS	Precipitator Outlet Duct	SICK MAIHAK, Inc.	Dusthunter T200	% Opacity	PLC Output to VIM
O_2 Sensor[a]	WFB 6th Floor	Rosemount	1U05717G02/ 3D39440G02	% O_2	DCS Output to PI
Steam Flow Meter	WFB 5th Floor	Rosemount	115DP5E12	Kilo-pounds per hour (KPPH)	DCS Output to PI

(a) O_2 set point is monitored on a minute basis. The set point value is transferred to Proficy.

4.1.1 WFB Monitoring Equipment

4.1.1.1 Trim System (O_2 Sensor)

The WFB is complying with the CO emissions limit using performance testing. To demonstrate continuous, proper operation of the boiler, an O_2 trim system is in place. Readings from an O_2 sensor provides a feedback signal to the combustion air flow. Using a DCS controller, O_2 is controlled by adjusting air flow to maintain the established O_2 set point control level. The minimum set point is the lowest hourly average O_2 concentration measured during the most recent performance test. Note that there are inherent operating situations which may require the oxygen

trim control system to be operated in the manual mode to ensure operational safety and boiler stability. Examples of these operating situations include startup and shutdown, oxygen analyzer calibration, and combustion control system adjustments. These periods of manual operation are of limited duration and will not be considered as compliance deviations. The O_2 sensor was installed in accordance with manufacturer specifications and 40 CFR §63.7525 such that the location provides a representative measurement of boiler O_2. The sensor is located is the boiler combustion zone.

4.1.1.2 Boiler Steam Flow

The WFB is equipped with a steam flow meter and is complying with the emissions limits using performance testing. To demonstrate continuous compliance of the boiler with the operating load limit, a steam flow meter is in place. The operating load limit is established as 110% of the highest hourly average operating load measured during the most recent performance test. The steam flow meter was installed in accordance with manufacturer's specifications in a location on the main steam line exiting the boiler that provides a representative measurement of steam flow from the boiler.

4.1.1.3 Opacity

The WFB is complying with the PM emissions limit through performance testing. To demonstrate continuous compliance, a COMS is in place. The COMS is installed, operated, and maintained according to Performance Specification 1 at Appendix B of 40 CFR Part 60 and 40 CFR §63.7525. Continuous compliance is demonstrated by maintaining the daily block average opacity at or below 10%.

5. PERFORMANCE AND EQUIPMENT SPECIFICATIONS

Pursuant to 40 CFR §63.7505(d)(1)(ii), Billerud must address performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems in the SSMP.

5.1 WFB PERFORMANCE AND EQUIPMENT SPECIFICATIONS

Performance and equipment specifications applicable to the CMS monitoring equipment for the WFB are outlined in Table 5-1.

Table 5-1
WFB Performance and Equipment Specifications

Equipment	Type	Sample Interface	Manufacturer Specified Accuracy	Parametric Signal Analyzer/Monitor Range/Output	Data Collection and Reduction Systems
Opacity Meter	SICK MAIHAK, Inc., Dusthunter T200	Light transmission = transmitter/ receiver unit and reflector unit on precipitator outlet duct to stack	±2% full scale	System span 0-80%/ 4-20 mA (max range 100%)	Data is collected in a DCS system. VIM software is used to reduce and manage the data from the DCS system.
O_2 Meter	Rosemount 1U05717G 02/3D3944 0G02	Zirconium Oxide Oxygen Probe positioned in the boiler	±3% of range maximum	Calibrated range: 0-21% O_2/ 4-20 mA (max range 21% O_2)	Data is collected in a DCS system. PI/Proficy software are used to reduce and manage the data from the DCS system.
Steam Flow Meter	Rosemount 115DP5E1 2	Flow Nozzle in steam line to distribution header	±1% full scale	0-253" H_2O, 4-20 mA, 0-450 KPPH	Data is collected in a DCS system. PI/Proficy software is used to reduce and manage the data from the DCS system.

6. PERFORMANCE EVALUATION PROCEDURES

Pursuant to §63.7505(d)(3), Billerud must address performance evaluation procedures and acceptance criteria (e.g., calibrations, accuracy audits, analytical drift) in the SSMP. Out-of-control (OOC) periods are addressed in 40 CFR §63.8(c)(7). This section of the regulation addresses the following:

40 CFR §63.8(c)(7):

(i) A CMS is out of control if –

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two (2) times the applicable CD specification in the applicable performance specification or in the relevant standard; or

(B) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or

(C) The COMS CD exceeds two (2) times the limit in the applicable performance specification in the relevant standard.

(ii) When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under this part. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calculations, or to meet any data availability requirement established under this part.

Pursuant to 40 CFR §63.8(c)(7), Billerud must take the necessary corrective actions to repair the CPMS. During the period the monitoring equipment is OOC, Billerud does not use the recorded data in data averages and calculations or to meet data availability requirements.

The OOC periods, as defined in 40 CFR §63.8(c)(7)(i), address COMS and CEMS. Except for the COMS used for compliance purposes for the WFB, these definitions do not apply to the SSMP for Billerud. The type of monitoring equipment that is used for compliance with the Boiler MACT does not typically involve frequent periodic drift tests because the monitoring equipment is not designed for that purpose. Furthermore, to date, U.S. EPA has not promulgated performance specifications for CPMS (i.e., pressure monitors, scrubber flow meters, or steam flow meters) of the type used for Subpart DDDDD compliance. The performance evaluation procedures outlined above apply to CMS with promulgated performance specifications. Billerud has developed their own performance evaluation procedures for the CMS without a promulgated performance specification using manufacturer specifications.

Therefore, Billerud has developed the following general definition of an OOC period for the non-COMS CMS for the Mill:

- *The beginning of the OOC period* is defined by the Mill as the hour that the CPMS reading is noted to be operating outside of the quality control limits. This can include a review of operating data in order to identify events, such as power outages, that may have caused the meter to go OOC.
- *The end of the OOC period* is defined by the Mill as the hour following the completion of corrective action and successful demonstration that the system is within the allowable quality control limits.

(a) Calibration is conducted through a performance evaluation at the time of each performance test, but no less frequently than annually.

6.1 WFB CMS PERFORMANCE EVALUATION PROCEDURES

Billerud has developed and implemented the following performance evaluation procedures for the WFB CMS in Table 6-1. Additional details regarding the CMS performance evaluation procedures, including calibration and adjustment procedures can be found at the location referenced in Appendix A.

Table 6-1
WFB CMS Calibration Frequency and Calibration Acceptance Criteria

Measurement Type	Instrument Type	Calibration Frequency	Calibration Acceptance Criteria
Opacity Meter	SICK MAIHAK Dust Hunter T200	Daily (Zero and Span)	≤ 4% Opacity
		Quarterly (Performance Audit)	Zero Compensation: ≤ 4% Opacity
			Audit Zero: ≤ 1% Opacity
			Audit Calibration Error: ≤ 3% Opacity
			Optical Alignment: Light beam outside of acceptable alignment area
		Annual (Zero Alignment)	≤ 2% Opacity
O_2 Meter	Rosemount O_2 Sensor	Annual (Performance Audit)	% error <3% of maximum range
Steam Flow Meter	Rosemount Flow Sensor	Performance Evaluation During Scheduled Boiler Outage	Flow sensor with minimum tolerance of 2% of flow rate

6.1.1 WFB O_2 Performance Evaluation Procedures

To ensure on-going compliance with CO emissions limits, an O_2 trim system is utilized. The boiler excess air O_2 trim system set point is continuously monitored to ensure that it is no lower than the established operating level. Periodic O_2 meter accuracy audits will be conducted to determine and/or adjust for drift. The requirement for a boiler using an O_2 trim system to demonstrate compliance with CO is defined in 40 CFR §63.7525(a)(7) and Table 8 of Subpart DDDDD. The operating limit will be the lowest hourly average O_2 measured during the most recent CO performance test.

6.1.1.1 *Performance Evaluation*

Pursuant to 40 CFR §63.7525(a), boilers subject to CO emissions limits require the installation of an O_2 analyzer system. In accordance with 40 CFR §63.7575, the O_2 analyzer was installed and initially validated based on the manufacturer recommendations.

6.1.1.2 *Daily*

The O_2 analyzer system will be checked daily, to ensure the O_2 sensors are functioning properly. This task will be performed by the Mill's monitoring system by performing "flat-line" and "out-of-range" checks on the signals. If the values received into the PI/Proficy system have not shown a change in the readings (using a max minus min average greater than zero over a 15-minute period in Proficy) or the values are outside the instrument ranges the system will create an alarm, which requires a corrective action by operations. In addition to the "flat-line" and "out-of-range" checks, the DCS monitoring system is built with "watchdogs" that track the communication between the different components of the tracking system. Loss of communication triggers an alarm which is followed-up on by mill personnel.

6.1.1.3 *Annually*

The O_2 analyzer system calibration checks or audits will be performed annually, at a minimum, pursuant to 40 CFR §63.7525(d)(4). The calibration will be checked by applying known gas concentrations to the probe and then calculating the percent error (difference between the transmitter value and the known signal value). During the audit, the instrumentation will be inspected for conformance with manufacturer specifications. In addition to the calibration checks, the facility will perform an inspection of all components for integrity, of all electrical connections for continuity, and of all mechanical connections for leakage.

Results of the performance audits are documented on the CPMS Evaluation Form printed from the SAP system (See Appendix B for an example of the required information). If an adjustment is required, the technician will indicate this on the evaluation form and record the readings before and after adjustment. Audit results will be maintained for five (5) years.

6.1.1.4 *Acceptance Criteria*

Should the annual audit % error exceed ±0.3% of maximum range, the meter is OOC and subject to CMS downtime. When the meter is OOC, corrective action must be initiated as described in the Mill's maintenance plan. If corrective action is required, the action taken will be recorded in the SAP Maintenance Tracking System.

Table 6-2
WFB O_2 Corrective Action Trigger Points

Source/Monitor	Point of Corrective Action	OOC Period Begins	OOC Period Ends
O_2 Analyzer System	Audit difference ±0.63% O_2	Upon failure of audit	Upon successful completion of audit

6.1.2 WFB Steam Flow Meter Performance Evaluation Procedures

To ensure on-going compliance with boiler operating loads, the steam flow rate will be continuously monitored, and periodic accuracy audits will be conducted to determine and/or adjust for calibration drift. For boilers demonstrating compliance through performance testing, the requirement for an operating load limit is described in Table 4 of Subpart DDDDD. This requires maintaining the operating load such that it does not exceed 110% of the highest hourly average recorded during the most recent performance test. Compliance will be determined on a 30-day rolling averages.

6.1.2.1 *Performance Evaluation*

Flow meters are calibrated at the factory and do not require further calibration upon installation. The flow meter was installed and initially validated based on the manufacturer's recommendations.

6.1.2.2 *Daily*

The steam flow meter will be checked daily, pursuant to 40 CFR §63.8(c)(6), to ensure the unit is functioning properly. This task will be performed by the VIM Data collection system by performing flat-line checks on the meter's signal. If the value received into VIM system has not shown a change in the reading (analyzing a change in flow readings over a 15-minute period) the system will create an alarm which will require acknowledgement by operations, evaluation of monitor status, and entry of a cause and corrective action. All periods of monitor downtime, along with cause and corrective action, will be tracked in the VIM data collection system.

6.1.2.3 *Annually*

Because performance evaluations of this meter require the boiler to be offline, evaluations will be conducted by maintenance personnel during scheduled boiler outages. Results of performance evaluations will be documented in the Mill's SAP maintenance tracking system. The calibration will be checked by applying known test signal values to the flow transmitter and then calculating the percent error (difference between the transmitter value and the known signal value). The procedure will be performed by starting with a low signal value, increasing upwards to the max calibration value, then back down to the low point signal. During the audit, flow tubes will be inspected for conformance with manufacturer specifications, and a zero check will be conducted on the sensors.

In addition to the calibration checks, the facility will perform an inspection of all components for integrity, of all electrical connections for continuity, and of all mechanical connections for leakage.

Results of the performance audits are documented on the CPMS Evaluation Form in the SAP system (See Appendix B for an example of the required information). If an adjustment is required, the technician will indicate this on the evaluation form and record the readings before and after adjustment. Audit results will be maintained for five (5) years.

6.1.2.4 *Acceptance Criteria*

Should the annual audit error exceed 2%, the meter is OOC and subject to CMS downtime. When the meter is OOC, corrective action must be initiated as described in Section 9. Data collected during this period must not be used in data averages, calculations, or to meet the data availability requirements. If corrective action is required, the action taken will be recorded on the performance audit form, with documentation maintained in the SAP Maintenance Tracking System.

Table 6-3
WFB Steam Flow Meter Corrective Action Trigger Points

Source/Monitor	Point of Corrective Action	OOC Period Begins	OOC Period Ends
Steam Flow Meter	Audit error >2% of design flow rate	Upon failure of audit	Upon successful completion of audit

6.1.3 WFB COMS Performance Evaluation Procedures

The WFB COMS is operated according to the performance specifications under Appendix B to 40 CFR Part 60 and meets the requirements of 40 CFR §63.7525. Additional details regarding the COMS quality assurance and performance evaluation procedures, including calibration and adjustment procedures can be found in the Mill's CEMS Quality Assurance Plan. Billerud has developed specific definitions for OOC for the COMS. The definition is based on the general premise of defining when the data is "valid" versus when the data is "invalid". The definition is presented in Table 6-4.

Table 6-4
WFB COMS Definition of "Out-of-Control"

Measurement Type	Instrument Type	Definition of "Out'-of-Control"
Opacity Meter	Sick Optics COMS	The data is considered "out of control" if the zero, or high-level calibration drift (CD) exceeds two (2) times the applicable CD specification in the applicable performance specification.

7. DATA COLLECTION AND REDUCTION

Pursuant to 40 CFR §§63.8(g)(2) and 63.7505(d), data from COMS shall be reduced to six (6)-minute averages calculated from 36 or more data points equally spaced over each six (6)-minute period. Data from CEMS for measurement other than opacity shall be reduced to one (1)-hour averages computed from four (4) or more data points equally spaced over each one (1)-hour period, except during periods when calibration, QA, or maintenance activities pursuant to provisions of this part are being performed. During these periods, a valid hourly average shall consist of at least two (2) data points with each representing a 15-minute period. The following paragraphs describe how data is collected and reduced at the Quinnesec Mill to meet the regulations.

Continuous output from CMS (i.e., steam flow monitor, O2 monitor) is converted to parameter readings using the DCS, PI, and Proficy data collection systems. The Proficy data collection system utilizes the data to determine 15-minute, one (1)-hour, and ultimately 30-day rolling averages. In accordance with 40 CFR §63.7525(d)(1), the CPMS must complete a minimum of one (1) cycle of operation for each successive 15-minute period, and a minimum of four (4) successive cycles to have a valid hour of data. Any data recorded during monitoring malfunctions, associated repairs, OOC periods, or QA/QC activities are invalid and will not be used in calculating data averages. Valid data also exclude hours during startup and shutdown. In accordance with 40 CFR §63.7535(d), except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system QA/QC activities (including, as applicable, system accuracy audits, calibration checks, and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements.

A 15-minute block value is reported as long as there is at least one (1) valid data point available during the time period in accordance with 40 CFR §63.7525(d)(1). If more than one (1) valid data point is available, the system will average the data to create the 15-minute block value. The system will then calculate a one (1)-hour block average from the previous four (4) 15-minute block values. There must be four (4) valid 15-minute values available to calculate the one (1)-hour block average, otherwise the system will report monitor downtime for the one (1)-hour block period. The exceptions to the four (4) 15-minute period requirement are:

1. If QA/QC activities are being performed, then a minimum of two (2) valid 15-minute block values may be used to calculate the one (1)-hour block average [40 CFR §63.8(g)(2)]
2. If the unit (i.e., boiler) operating time is less than one (1)-hour, then the following criteria will be used[4]:

Table 7-1
Valid Data & Averaging Time

Operating Time	Minimum Number of 15-minute data blocks
Less than 30 minutes	Will Not Calculate
30 minutes	Two (2) 15-minute blocks
30 to 45 minutes	Three (3) 15-minute blocks
Greater than 45 minutes	Four 15-minute blocks

Note that data from the O_2 trim system O_2 sensors are transferred directly from the DCS to the O_2 trim system controller. The O_2 trim system utilizes a feedback controller configured to handle the variability associated with data from the O_2 sensor because the O_2 system must be responsive to changes in O_2 levels. For this reason, the O_2 trim system set point data are not reduced to 15-minute averages. Furthermore, Billerud believes that data reduction of O_2 trim system set point is not required as there is no parametric limit (e.g., 30-day rolling average) associated with this compliance option.

The system will then calculate the 30-day rolling average by averaging the previous valid one (1)-hour block average pursuant to 40 CFR §63.7525(d)(4). The 30-day rolling average (except for the O_2 trim system set point) will be calculated with all recorded readings as arithmetic mean of the previous 720 hours of valid operating data. The 720 hours should be consecutive, but not necessarily continuous if operations were intermittent. The 30-day rolling average will be calculated at midnight each day.

[4] Adopted from EPA ADI Control Number 9800094

8. PREVENTATIVE MAINTENANCE

The primary objective of a comprehensive preventative maintenance program is to help ensure the timely and effective completion of a measurement effort. Billerud's preventative maintenance program is designed to minimize the downtime of CMS equipment due to component failures.

Routine maintenance and performance audit procedures are documented and scheduled using the Mill's SAP Maintenance Planning and Tracking Systems. The SAP Maintenance Tracking System will be used to track the maintenance history of the equipment. All maintenance activities performed on CMS equipment are recorded in SAP along with completion dates by E&I or Mechanical Maintenance Personnel.

The maintenance frequency will be based on the manufacturer's recommendations, equipment history, or the industry standard. Adjustments in the frequency will be made as necessary. Mechanical problems identified during basic care routes will be identified in the work order system and repaired at the next available opportunity or during the next shutdown depending on the severity of the problem and the potential environmental impact.

Preventative maintenance procedures are conducted based on standard industry practices and facility maintenance experience. Complete preventative maintenance procedures can be found at the location referenced in Appendix A.

8.1 SPARE PARTS

Billerud maintains a spare parts and replacement equipment inventory based on manufacturer recommendations and Mill maintenance experience for routine repair of the monitoring equipment required by the Boiler MACT. An adequate spare parts inventory is required to minimize equipment downtime. The spare parts inventory targets those parts and supplies which are subject to frequent failure, have limited useful lifetimes, and/or cannot be obtained in a timely manner should an equipment failure occur. Spare parts necessary for routine maintenance are stocked in the storeroom, and in some cases the maintenance areas. The spare parts inventory is maintained by the SAP tracking system.

9. CORRECTIVE ACTION PROGRAM FOR MALFUNCTIONING CMS

When a monitor is OOC, corrective action must be initiated. Data collected during this period must not be used in data averages or calculations or to meet the data availability requirements. If corrective action is required, the action taken will be documented in SAP Maintenance Tracking System. Corrective actions resulting from performance audits will be recorded on the performance audit form, with documentation maintained in the SAP Maintenance Tracking System and/or COMS electronic logbook (VIM CEMLink6, or "VIM"). Corrective action procedures can be found at the location referenced in Appendix A. Resources that the Mill uses for corrective actions for malfunctioning CMS include manufacturer guidelines, maintenance procedures, and maintenance experience. CMS malfunctions and downtime are tracked using the automated electronic recordkeeping and reporting system (VIM). Records of all corrective actions are maintained in the SAP maintenance tracking system and COMS electronic logbook (VIM).

10. RECORDKEEPING AND REPORTING REQUIREMENTS

Pursuant to 40 CFR §63.7505(d)(2)(iii), Billerud must address ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR §§63.10(c) (as applicable in Table 10 to Subpart DDDDD), (e)(1), and (e)(2)(i). Billerud must also address ongoing recordkeeping and reporting procedures pursuant to 40 CFR §§63.7535(c) and (d), 63.7550(d) and (e), 63.7555(b), (c), (d)(1-8) and (d)(10-11), and 63.7560.

In order to comply with these requirements, Billerud will maintain the following records in a form suitable and readily available for review for a minimum of five (5) years:

- Required monitoring data including monitoring data from the beginning of startup until the end of shutdown, as defined in Section 3. This includes monitoring data recorded during unavoidable CPMS breakdowns and OOC periods, as well as monitoring data for COMS during a performance evaluation. Records are maintained electronically.
- Required measurements needed to demonstrate compliance with a relevant standard (e.g., 15-minute readings and hourly averages of CMS data and/or raw performance testing measurements).
- The occurrence and duration of each startup or shutdown when the startup or shutdown caused the source to exceed any applicable emissions limitation in the relevant emissions limits.
- The occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment, as defined in Section 3.
- The nature and cause of each malfunction (if known) of the CMS.
- The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks.
- All required maintenance and adjustments performed on the air pollution control and monitoring equipment.
- The nature of the repairs or adjustments to the CMS that was inoperative or out of control. Records are maintained electronically.
- Results of performance tests/audits, CMS performance evaluations, and opacity.

- Measurements as may be necessary to determine the conditions of performance tests and performance evaluations.
- CMS calibration checks.
- Previous (i.e., superseded) versions of the performance evaluation plan, which is presented in this SSMP.
- Request for alternatives to relative accuracy tests for CEMS.
- The data and time that each deviation started and stopped.
- Nature of the deviation (i.e., what you deviated from).
- A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during the reporting period.
- A characterization of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
- A summary of the total duration of CMS downtime during the reporting period and the total duration for CMS downtime as a percent of the total source operating time during that reporting period.
- A brief description of the source for which there was a deviation.
- A description of any changes in CMS, processes, or controls since the last reporting period for the source for which there was a deviation.
- Monitoring data and calculated averages for applicable operating limits.
- Monthly fuel use including type(s) and amount(s) used.
- The type(s) and amount(s) of fuels used during each startup and shutdown.
- The calendar date, time, occurrence, and duration of each startup and shutdown.
- Actions taken during periods of malfunction to minimize emissions.
- Dates and duration of periods when the CMS is out of control, as defined in Section 6, to completion of the corrective actions necessary to return the CMS to operation consistent with the SSMP.
- A copy of calculations and supporting documentation of maximum mercury fuel input.
- A copy of calculations and supporting documentation of maximum chlorine fuel input.

- The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parametric monitoring exceedances, as defined in Section 3.
- The corrective action taken or preventive measures adopted, as defined in Section 9.
- The total process operating time during the reporting period.
- Procedures that are part of a quality control program developed and implemented for the monitoring equipment.

11. REVISIONS OF THE SSMP

Revisions of the SSMP are the responsibility of Billerud.

11.1 REVISIONS REQUIRED BY THE PERMITTING AUTHORITY

As stated in 40 CFR §63.7507(d), Billerud must develop this SSMP and make it available for inspection by the Michigan Department of Environmental Quality (MDEQ). If MDEQ inspects the plan and determines that any portion of the plan is not adequate, Billerud will address the issues as agreed upon with MDEQ.

11.2 REVISIONS INITIATED BY BILLERUD

Billerud may periodically revise this plan, as necessary, to satisfy the requirements of the regulation or to reflect changes in equipment or procedures at an affected source. Revisions to the plan are documented in Table 11-1. In order to make these changes, Billerud will use the following procedure:

- Billerud will review the SSMP periodically, at a frequency no less than annually, and amend the SSMP accordingly when there is a change that materially affects the design, operation, or maintenance of a CMS.
- Billerud will develop the revised plan and can implement the changes, as appropriate, upon completion of the revisions.
- The Mill will maintain copies of the previous versions of this plan for a minimum of five (5) years.

Table 11-1
SSMP Revisions Summary

Date	Description of Activity	Reviewer
Revision 0, November 2015	Original SSMP developed	Rich Menard
Revision 1, September 2017	Added language to 4.1.1.1 to allow for circumstances where O2 trim setpoint could be set below the established value. In table 5.1 changed the calibrated range for O2 to 0-21% and the steam flow output to 0-253" and 0-450 KPPH. Changed O2 audit acceptance criteria to +/- 0.63% O2 (=3% of range maximum).	Paula LaFleur
Revision 2, January 2024	Changed company name from Verso to Billerud Quinnesec. Changed company logo. Updated emissions limits in Table 4-1 per 10/6/2022 rule revisions.	Paula LaFleur
Revision 3, 2/1/24	Table 2-1: CMS calibrations, added "QA" and added Central Lab in addition to Maintenance as responsible. Added review and revision dates to title page. Clarified that corrective actions for COMS are tracked in VIM.	Paula LaFleur

APPENDIX A –
LOCATION OF CMS DOCUMENTATION

Table A-1
CMS Documentation Location

Document	Record Retention	Location
Performance Test and Continuous Monitoring System Performance Evaluation Results	*C+5*	Environmental Files
Daily Assessments	*C+5*	PI/Proficy/VIM System
Performance Evaluation Procedures and Results	*C+5*	SAP Maintenance Tracking System
Monitor Downtime & Corrective Actions	*C+5*	PI/Proficy/VIM System, Environmental Files
Preventative Maintenance Procedures, Corrective Action Procedures	*C+5*	Inside Utilities Maintenance Shop Files SAP Maintenance Tracking System
CEMS Quality Assurance Plan	*C+5*	Environmental Files
Routine Maintenance, Corrective Action Maintenance Documentation	*C+5*	SAP Maintenance Tracking System
Spare Parts List	*C*	SAP Maintenance Tracking System

C – Current Year
C+5 – Current Year and previous five (5) years of records

APPENDIX B –
CPMS PERFORMANCE EVALUATION DOCUMENTATION

Performance evaluations conducted by Maintenance are documented in SAP and the Loveland Maintenance tracking system. Performance evaluations conducted by the Central Lab are kept on file in the Environmental Department.

Billerud Quinnesec LLC

SITE-SPECIFIC FUEL SAMPLING & ANALYSIS PLAN

FOR 40 C.F.R. PART 63, SUBPART DDDDD
(NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters)

Effective November 2015

Revision Date: 4/24/23
Review Date 2/1/2024

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1.0 INTRODUCTION

Billerud Quinnesec LLC (the "Quinnesec Mill") is a coated and publication paper manufacturing facility located in Quinnesec, MI. The facility is subject to *40 C.F.R. Part 63 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters* (hereafter referred to as Boiler MACT). The Boiler MACT allows the use of fuel analysis or performance (stack) testing to demonstrate compliance with the mercury (Hg), hydrogen chloride (HCl), carbon monoxide (CO), and total selected metals (TSM) emission limits. Regardless of the compliance demonstration method selected, each facility subject to the Boiler MACT must develop and then submit (if requested, or required if using alternative methods) a site-specific fuel analysis plan in accordance with 40 C.F.R § 63.7521(b).

Fuel Sampling Requirements

The Quinnesec Mill will demonstrate compliance with the applicable Hg and HCl emission limits using performance testing. This requires a fuel analysis to be conducted during the initial performance (stack) test or subsequent performance test if a new fuel type is burned with a higher pollutant loading than that which was established during the initial performance test.

In the event that the Quinnesec Mill chooses to demonstrate compliance with the applicable Hg and HCl emission limits via monthly fuel analysis, the procedures outlined in this plan will be used.

For reference, Table 1-1 provides the required elements for the site-specific fuel analysis plan.

Table 1-1 Cross Reference of Site-Specific Fuel Analysis Plan Requirements

Regulatory Citation & Description		**Plan Section Number**
§63.7521(b) (1) You must submit (if requested) the fuel analysis plan no later than 60 days before the date that you intend to demonstrate compliance if alternative methods are used.		2.0
§63.7521(b) (2) You must include the information contained in paragraphs (b) (2) (i) through (vi) of this section in your fuel analysis plan.		
(2)(i)	The identification of all fuel types anticipated to be burned in each boiler or process heater.	3.0
(2)(ii)	For each fuel type, the notification of whether you or a fuel supplier will be conducting the fuel analysis.	5.1
(2)(iii)	For each fuel type, a detailed description of the sample location and specific procedures to be used for collecting and preparing the composite samples if your procedures are different from paragraph (c) or (d) of this section. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types.	4.1
(2)(iv)	For each fuel type, the analytical methods, with the expected minimum detection levels, to be used for the measurement of hydrogen chloride, or mercury.	5.2
(2)(v)	If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that will be used.	5.2
(2)(vi)	If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.	N/A

2.0 PLAN SUBMITTAL REQUIREMENT

40 C.F.R.§ 63.7521(b)(1) requires that a facility submit the fuel analysis plan no later than 60 days before the date you intend to demonstrate compliance if alternate test methods other than those in Table 6 of the Boiler MACT rule are used.

Fuel Sampling Required during Performance Testing

For initial performance testing or performance testing to demonstrate compliance burning new fuel(s) the Quinnesec Mill will conduct fuel sampling on the date of the performance test when demonstrating compliance with the emission standards for mercury (Hg) and hydrogen chloride (HCl) in Table 2 of the MACT rule. The Quinnesec Mill will be sending the samples to a laboratory that will be using equivalent sample preparation and test methods other than those explicitly listed in Table 6 of the rule.

Each composite fuel sample collected during the performance test runs will be made up of three individual samples . Samples collected from a pile will consist of three composite samples collected according to 63.7521(c)(2)(i) through (iii).

Fuel Sampling Required for Monthly Fuel Analysis

In the event that the Quinnesec Mill chooses to conduct monthly fuel sampling for compliance, fuel sampling would start after January 2016. By submitting the fuel analysis plan at the time of initial performance testing, the 60-day notification requirement for alternative/equivalent methods has been met.

3.0 BOILER AND FUEL INFORMATION

The Quinnesec Mill operates a multi-fuel fired boiler (Waste Fuel Boiler or WFB) which is subject to the Boiler MACT standard. The WFB produces steam for energy generation and provides heat for the pulp and paper-making process. A natural gas fired package boiler is also an affected unit under the rule with no fuel sampling requirements. An initial notification for these boilers was submitted to EPA and MDEQ (Michigan Department of Environmental Quality) on May 14, 2013. A description of the WFB and the fuel types burned are provided in Table 3-1.

Table 3-1 Quinnesec Mill Boiler Description and Fuel Types

Boiler ID	Description	Maximum Rated Capacity	Fuels	Control Device (Installation Year)
WFB (EU1121)	Installed: 1985 Manufacturer: B&W Boiler Category: Stoker/Sloped grate designed to burn wet biomass	660 MMBtu/hr 363 MMBtu/hr fossil fuel limit	Biomass[1] Coal Natural Gas[2]	Electrostatic Precipitator Installed: 1985

[1] Biomass includes bark, sawdust, clean wood debris wood residue; wood products (*e.g.,* trees, tree stumps, tree limbs, lumber, sander dust, chips, scraps, slabs, millings, and shavings.

[2] Per § 63.7510 (a)(2)(ii), when natural gas or other gas 1 fuels are co-fired with other fuels, you are not required to conduct a fuel analysis of natural gas or other gas 1 fuels according to § 63.7521 and Table 6 to Subpart DDDDD.

4.0 FUEL SAMPLING

The specific sampling and preparation procedures listed in 40 CFR §63.7521(c) and (d) are included in Appendix A and will serve as the protocol for all solid fuel samples. Natural gas (gas 1 fuel) is exempt from monitoring requirements as specified in §63.7510(a)(2)(ii).

4.1 SAMPLE LOCATIONS AND PROCEDURES

Biomass

Quinnesec Mill personnel will conduct on-site fuel sample collection from the facility's boiler bark/wood feed conveyor according to the procedures specified in §63.7521(c)(2) For analysis as part of a performance test, a composite sample will be collected for each test run. If collected for monthly fuel analysis, a minimum of one composite sample will be collected. The analyzing laboratory will prepare the composite samples as specified in §63.7521(d).

Coal

Quinnesec Mill personnel will conduct on-site fuel sample collection from the facility coal pile according to the procedures specified in §63.7521(c)(2). For analysis as part of a performance test, sampling from the coal pile will be conducted in the hours prior to or during the performance test. Because the coal supply pile does not change throughout the performance testing, sampling will not be conducted during each run. If collected for monthly fuel analysis, a minimum of one composite sample will be collected. The analyzing laboratory will prepare the composite samples as specified in §63.7521(d).

4.2 GENERAL REQUIREMENTS FOR MONTHLY FUEL ANALYSIS

If monthly fuel analysis is used as the compliance method, a minimum of one composite sample will be collected during the month for each fuel type combusted. The monthly fuel sampling and preparation will follow the procedures outlined above. Fuel analysis may be conducted any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If a new type of fuel is burned, fuel analysis will be conducted before burning the new type of fuel. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, the fuel analysis frequency may be decreased to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level a new type of fuel is burned, monthly monitoring will be resumed for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. If sampling is conducted on one day per month, samples will be collected no less than 14 days apart. If multiple samples are taken per month, the 14-day restriction does not apply.

5.0 FUEL ANALYSIS

5.1 ANALYTICAL LABORATORY

All samples collected by the Quinnesec Mill's personnel will be sent to ALS Life Sciences Division, Environmental 3860 South Palo Verde Road, Suite 302 Tucson, AZ 85714 USA, www.alsglobal.com for sample preparation and analysis. ALS Tucson has received accreditation from the American Association for Laboratory Accreditation for fuel sampling which meets the sampling requirements in Boiler MACT. Appendix B provides a copy of their accreditation (Copies of new certification will be periodically required.)

Samples may alternatively be sent to the following lab: ALS Environmental 9143 Philips Highway, Jacksonville, FL 32256, 904-739-2277 www.alsglobal.com in Jacksonville, FL. ALS Jacksonville has received NELAP accreditation through the State of Florida Department of Health, Bureau of Laboratories for several analytical techniques including: extractable organics, general chemistry, metals and volatile organics—all from under the solid and chemical materials category.

Analysis of new fuels or non-performance test fuels used to demonstrate ongoing compliance with established pollutant loading values will be conducted by the Quinnesec Mill or the fuel supplier. Samples collected by Quinnesec Mill's personnel will be collected utilizing the appropriate method specified at §63.7521(c). All samples will be will be analyzed by a contract lab or the supplier using the methods or equivalent methods as specified in Table 6 of 40 CFR 63 Subpart DDDDD.

5.2 ANALYTICAL PROCEDURES

Table 5-1 below contains the list of relevant sample collection, preparation, and test methods from Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements (see the column labeled Table 6 method); these methods have been reviewed and approved by the Environmental Protection Agency (EPA). Table 5-1 also shows the Equivalent Methods that will be used by the mill (see the last column in the table below). Additional descriptions of the equivalent/alternative methods are included in the footnotes below.

Table 5-1: Fuel Analysis Test Methods

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Table 6 Method[3]	Equivalent /Alternative Methods Used by the Mill
1. Mercury	a. Collect fuel samples	Procedure in § 63.7521(c) or, or ASTM D4057 (for liquid), or equivalent.	The bark samples are collected and temporary transferred to a clean plastic bucket. Once three samples are collected, they are then mixed and quartered in accordance with § 63.7521(d). For liquid sampling, see the prior section 4.2 of this plan.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.	-
Mercury	c. Prepare composited fuel samples	…or equivalent[4]	Equivalent method: ASTM E1757[5] for biomass and sludge Liquid fuel samples do not need preparation, other than mixing prior to analysis.

[3] Additional methods are listed in Table 6 of the rule.

[4] In Table 6, the only listed method that details how to prepare a fuel sample for analysis, including air drying and grinding, is ASTM D2013/2013M. Methods EPA SW-846-3050B, EPA 3050, and ASTM D5198 are acid digestion methods and do not cover the homogenization of raw bulk samples for analysis. Also, ALS believes these digestion methods are not appropriate for Mercury. Method EPA 821-R-01 does have some brief references for prepping biota and sludge samples for Mercury analysis, but not for solid matrix samples like biomass samples. (ALS)

[5] For ASTM E1757 "*Standard Practice for Preparation of Biomass for Compositional Analysis*", the sample preparation procedure is written to insure that samples are homogenized in a manner to maintain sample integrity by avoiding contamination of the sample, minimizing moisture loss and exposure to excessive heat during the grinding process while insuring that a representative sub sample is achieved that is suitable for analysis. The prep method involves air drying the raw sample at 40°C to minimize moisture loss during the preparation process. Air dried samples are the ground to < 1 mm using non-contaminating equipment were ever possible to homogenize the sample for analysis. The Air Dry Loss moisture (ADL) is determined from the weight lost during the air drying process and is used to calculate the Total Moisture. (ALS)

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Table 6 Method[3]	Equivalent /Alternative Methods Used by the Mill
	d. Determine heat content of the fuel type	ASTM D5865[6] (coal), ASTM E711 (for biomass), or ASTM D240[7] or equivalent.	Equivalent Method: ASTM D5865 for biomass and sludge Equivalent Method: ASTM D4809[8] for liquids: *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter*
Mercury	e. Determine moisture content of the fuel type	ASTM E871[9] , or ASTM D95 (for liquid fuels), or ASTM D4006 (for liquid fuels), or equivalent.	Equivalent method: ASTM D7582[10] for biomass and sludge. Moisture is not required for fuel oil to determine the heat content of the fuel. If required, method ASTM E1064 or D6869 [11] will be used.

[6] Methods D5865, E711 and D240 all use the same analytical technique and instrumentation – a LECO AC600 bomb calorimeter. The calibration of the bomb calorimeter is performed in the same manner using benzoic acid pellets in all methods. NIST traceable Standard Reference Material that are similar in matrix to the samples being analyzed and are used to verify the calibration of the calorimeter. The methods are equivalent except for matrix. (ALS)

[7] ASTM D240 "*Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter"*

[8] Method D4809 utilizes the same instrumentation as D240 and actually has better precision than D240.
[9] ASTM E871 *"Standard Test Method for Moisture Analysis of Particulate Wood Fuels"*

[10] ASTM D7582 **"***Proximate Analysis of Coal and Coke by Macro Thermogravimetric Analysis*" is an automated method for the determination of Moisture, Volatile Matter, Fixed Carbon, and/or Ash. It is equivalent to ASTM methods D3173 and E871 for determining Moisture in that the samples are dried around 105C. The TGA system is automated so that the weights are measured repeated throughout the analytical run. The Moisture analysis is complete when the sample weights become constant and no additional moisture loss is measured. The equivalency of D7582 against D3173 and E871 is demonstrated by analyzing NIST traceable Standard Reference Materials as laboratory control samples with each run of 20 or fewer samples. ALS Tucson also participates in a quarterly in a round-robin program by analyzing and reporting blind proficiency standards. This information is available upon request from the laboratory (ALS).

[11] ASTM E1064 "*Standard Test Method for Water in Organic Liquids by Coulometric Karl Fischer Titration"*. ASTM D95 and D4006 methods use distillation. ASTM D6869 "*Standard Test Method for Coulometric and Volumetric Determination of Moisture in Plastics Using the Karl Fischer Reaction* (the Reaction of Iodine with Water)". Both methods use the Karl Fischer methodology.

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Table 6 Method[3]	Equivalent /Alternative Methods Used by the Mill
	f. Measure mercury concentration in fuel sample	EPA SW-846-7471B (for solid samples), or EPA SW-846-7470A (for liquid samples), or equivalent.	Equivalent method: Mercury by D6722[12] for biomass, sludge, and liquid fuels
Mercury	g. Convert concentration into units of pounds of mercury per MMBtu of heat content	Equation 8 in § 63.7530.	-
2. HCl	a. Collect fuel samples	Procedure in § 63.7521(c) or, or ASTM D4057 (for liquid), or equivalent.	The bark samples are collected and temporary transferred to a clean plastic bucket. Once three samples are collected, they are then mixed and quartered in accordance with § 63.7521(d). For liquid sampling, see the prior section 4.2 of this plan.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.	-
	c. Prepare composited fuel samples	…or equivalent	Equivalent methods will be used. See above. The same methods as for mercury will be used.
	d. Determine heat content of the fuel type	ASTM D5865 (coal), ASTM E711 (for biomass), or ASTM D240[a] or equivalent.	Equivalent methods will be used. See above. The same methods as for mercury will be used.
	e. Determine	ASTM E871, or ASTM D95	Equivalent methods will be used. See

[12] The Total Mercury method is performed following ASTM D6722 on a NIPPON MA3000 using high temperature combustion at 950°C with gold amalgamation to trap the Mercury followed by AAS to analyze the Mercury vapor that is released from the gold trap after it is rapidly heated. Method D6722 references the sample preparation method D2013 for coal, and D2013 references D3302 which involves Air Drying at 40°C prior to grinding samples for analysis. This method can be used for liquid and solid matrices. The method modification only pertains to the sample matrices that are not coal. Instrument calibration and the analytical processes are the same for all sample matrices. This technique is actually superior to EPA 7471B for solid matrices in that the analysis is direct and does not require the acid digestion step in 7471B. There are little to no matrix effects for D6722, it has better recovery of Mercury, and a lower reporting limit (down to 1 ppb for D6722) since there is no digestion step. The digestion step of 7471B can cause a low bias for samples with a complex matrix such as wood, refuse, tire derived fuel, and oil due to incomplete digestion of the sample (per ALS).
The performance of D6722 for each analytical run is measured by analyzing NIST traceable Standard Reference Materials with certified Mercury values that are similar in matrix as the samples. (ALS)

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Table 6 Method[3]	Equivalent /Alternative Methods Used by the Mill
	moisture content of the fuel type	(for liquid fuels), or ASTM D4006 (for liquid fuels), or equivalent.	above. The same methods as for mercury will be used.
	f. Measure chlorine concentration in fuel sample	EPA SW-846-5050 or ASTM E776 (for solid fuel), or EPA SW-846-9056[13] or SW-846-9076 (for solids or liquids) or equivalent.	-
HCl	g. Convert concentrations into units of pounds of HCl per MMBtu of heat content	Equation 7 in § 63.7530.	-

Table 5-2 contains the test methods and expected detection limits for the fuels fired at the Androscoggin Mill.

Table 5-2 Fuel Analysis Detection Limits

Parameter	Test Method	Detection Limit
Hydrogen Chloride (Chlorine)	EPA SW-846-9056	100 ppm (solids & oil)
Mercury (Solids & Liquids)	ASTM D6722 mod	1 ppb (solids & oil)
Heat Content	ASTM D4809 (liquids) or ASTM D5865 (solids)	N/A
Moisture Content	ASTM D7582 Proximate by Automated TGA System	N/A

[13] Table 6 methods, 5050/9056, will be used for biomass and coal.

5.3 EQUIVALENCY

In accordance with § 63.7575, *Equivalent* means the following only as this term is used in Table 6 of the rule:

1. An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.
2. An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.
3. An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.
4. An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.
5. An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining metals (especially the mercury, selenium, or arsenic) using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing these metals. On the other hand, if metals analysis is done on an "as received" basis, a separate aliquot can be dried to determine moisture content and the metals concentration mathematically adjusted to a dry basis.
6. An equivalent pollutant (mercury, HCl) determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for the pollutant and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 6 to this subpart for the same purpose.

5.4 DATA ANALYSIS

Non-Detect Data

Non-Detect data of an individual HAP will be treated as zero if all the samples result in a non-detect measurement. Otherwise, the non-detect data for the individual HAP will be treated as one-half of the method detection limit.

Statistical Outliers

In order to ensure that the data is representative of the typical fuel fired, the facility will

use the Dixon's Extreme Value[14] to determine if there is at least one outlier present in the data set.

5.5 QUALITY ASSURANCE

All samples will be handled using a chain of custody form to ensure proper procedures are followed when collecting, storing, and changing possession of samples. Hold time for mercury analysis is 28-days for liquid samples and shall not be exceeded.

The laboratory being used for fuel analysis, CAS, will perform the following quality assurance checks for every batch of samples (20 samples maximum per batch): a method bank, a matrix spike, and a matrix spike duplicate.

REVISIONS

Date	Revision	Reviser
1/18/17	Section 4.1: Added language to coal sampling from the pile would occur in the hours prior to or during the performance test.	P. LaFleur
6/1/17	Section 4.1: Added paragraph for analysis of non-performance test fuels.	
9/1/17	Section 1.0: Clarified fuel sampling requirements for performance testing (initial and new fuel type).	
	Section 2.0: Clarified fuel sampling requirements for performance testing (initial and new fuel type). Added sentence for "Samples collected from a pile…."	
	Section 4.1: Per rule revisions, added language stating a minimum of one composite sample is required for monthly fuel analysis.	
	Section 4.2: Added 63.7515(e) requirements for sampling and analysis intervals and frequencies.	
	Appendix A: Updated language of 63.7521(c) as per rule revisions.	
4/24/23	Changed mill name from Verso to Billerud Quinnesec	P. LaFleur
2/1/24	On title page: Added updated effective date to that of original plan. Added Revision and Review Dates.	P. LaFleur

[14] EPA's Quality Guidance for Data Quality Assessment Practical Methods for Data Analysis EPA QA/G-9 QA00 UPDATE, July 2000

APPENDIX A SAMPLING AND SAMPLE PREPARATION PROCEDURES

40 C.F.R. § 63.7521(c)
At a minimum, for demonstrating initial compliance, you must obtain three composite fuel samples for each fuel type according to the procedures in paragraph (c) (1) or (2) of this section. For monthly fuel analyses, at a minimum, you must obtain a single composite sample. For fuel analyses as part of a performance stack test, as specified in §63.7510(a), you must obtain a composite fuel sample during each performance test run.

(1) If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of this section.
   (i) Stop the belt and withdraw a 6-inch wide sample from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. Collect all the material (fines and course) in the full cross-section. Transfer the sample to a clean plastic bag.
   (ii) Each composite sample will consist of a minimum of three samples collected at approximately equal intervals during the testing period.

   Note: Stopping of belts for sludge and biomass sampling cannot occur during the actual performance test runs, because it interrupts the operation of the boiler. The boiler would no longer be operating under "normal operating conditions". Sampling must occur between stack test runs. Individual stack test runs can take longer than 1 hour to complete. In addition, the sampling points must be locked-out for safety which also takes time to complete. For these reasons, individual sample collection for composite during the performance test cannot and will not practically occur at one-hour intervals. Sampling will be completed before the performance test runs, the boiler will be stabilized after the fuel collection interruption, and then the next performance test run will start.

(2) If sampling from a fuel pile or truck, collect fuel samples according to paragraphs (c) (2) (I) through (iii) of this section.
   (i) For each composite sample, select a minimum of five sampling locations uniformly spaced over the surface of the pile.
   (ii) At each sampling site, dig into the pile to a depth of 18 inches. Insert a clean shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling; use the same shovel to collect all samples
   (iii)Transfer all samples to a clean plastic bag for further processing.

40 C.F.R. § 63.7521(d)
Prepare each composite sample according to the procedures in paragraphs (d) (1) through (7) of this section.
(1) Thoroughly mix and pour the entire composite sample over a clean plastic sheet.

(2) Break sample pieces larger than 3 inches into smaller sizes.
(3) Make a pie shape with the entire composite sample and subdivide it into four equal parts.
(4) Separate one of the quarter samples as the first subset.
(5) If this subset is too large for grinding, repeat the procedure in paragraph (d) (3) of this section with the quarter sample and obtain a one-quarter subset from this sample.
(6) Grind the sample in a mill.
(7) Use the procedure in paragraph (d) (3) of this section to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure.

APPENDIX B ANALYTICAL LABORATORY CERTIFICATION

(attached if applicable)

Purpose/Regulatory Requirements

This document summarizes the Quinnesec Mill's stationary internal combustion engine requirements for the applicable sections of 40 CFR 63 Subpart ZZZZ Stationary Reciprocating Internal Combustion Engines (RICE) and 40 CFR 60 Subpart JJJJ Stationary Spark Ignition Internal Combustion Engine (SI-ICE). The Quinnesec Mill is considered a Major Source of HAP (hazardous air pollutant) emissions for regulator classification purposes.

Summary of Affected Units

Table 1 below details the five stationary internal combustion engines currently located at the Quinnesec Mill along with additional relevant information.

Table 1: Quinnesec Stationary Engines

Unit / Equipment #	Applicable Regulation	Location	Manufacture Date / Installation Date	Fuel	Compression or Spark Ignition	Rated Brake Horsepower	Maintenance Plan Numbers/Servicer
Emergency Diesel Fire Pump / Equip. #: 12-11001-21	40 CFR 63 Subpart ZZZZ (Emergency RICE unit)	Clearwell Building	4/23/2001 / 2001	Diesel	Compression	300	111505 Cummings
Lime Mud Storage Aux Gas Engine / Equip. #: 45-13011-21	40 CFR 63 Subpart ZZZZ (Existing RICE unit)	Lime Kiln	2002 / 2002	Gas	Spark	37	NA - Fairchild
Lime Kiln Aux Gas Motor / Equip. #: 45-5002-21	40 CFR 63 Subpart ZZZZ (Existing RICE unit)	Lime Kiln	1996 / 1996	Gas	Spark	30-40	NA - Fairchild
Admin Computer Room Backup Generator / Equip. #: 08-21020-92	40 CFR 63 Subpart ZZZZ (Existing RICE unit)	By Administrative Building	8/6/1999 / 8/1/2004	Natural Gas	Spark	97	111499 Wolter
#41 Computer Room Backup Generator / Equip. #: 65-31316-18	40 CFR 60 Subpart JJJJ (Certified Emergency SI-ICE unit)	41 Mezzanine Area	4/15/2010 / 12/15/2011	Natural Gas	Spark	176	100111 Wolter

Definitions

Stationary Engine – For the purposes of this document, stationary engines include reciprocating internal combustion engines which are not mobile engines. Mobile engines are excluded from the stationary engine requirements. Examples of *excluded mobile engines* include motor vehicles, self-propelled units, functionally propelled units (lawnmowers), and portable or transportable engines which do not stay in one location for longer than a 12-month period.

Reciprocating internal combustion engine (RICE) – Any stationary internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work. For the purposes of this document, the term "RICE" unit is used to describe engines which are regulated by 40 CFR 63 Subpart ZZZZ. RICE units may be either spark ignition (SI) or compression ignition (CI). An existing stationary RICE < 500 brake HP has a construction or reconstruction date before June 12, 2006.

Spark Ignition internal combustion engine (SI-ICE) – Any stationary spark ignition internal combustion engine (ICE), except combustion turbines, that converts heat energy into mechanical work. For the purposes of this document, the term "SI-ICE" is used to describe spark ignition ICE units which are regulated by 40 CFR 60 Subpart JJJJ. Note that natural gas RICE engines < 500 brake HP constructed after June 12, 2006 are considered SI-ICE.

EPA Certified stationary internal combustion engine – An engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in 40 CFR 60 subpart JJJJ, or of 40 CFR 90, 40 CFR 1048, or 40 CFR 1054, as appropriate.

Emergency stationary engine – A stationary engine (RICE or SI-ICE) used to provide electrical power or mechanical work during an emergency situation. Examples include stationary engines used to produce power for critical networks or equipment (including power supplied to portions

of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Emergency engines must comply with the applicable requirements in Table 2 or they will be subject to additional regulatory requirements

Major Repair – A major repair is defined as a repair costing greater than 50% of the cost of a new, comparable engine. If a major repair occurs, the engine is classified as reconstructed and the applicable compliance requirements for the stationary engine may change.

RICE Unit Regulatory Requirements

The determination of applicable stationary engine regulatory requirements is not a straightforward process. Compliance requirements depend upon many factors such as manufacture date, re-construction date, installation date, engine fuel type, engine horsepower, rich-burn or lean-burn, 2-stroke or 4-stroke, and engine use (emergency or non-emergency). Table 2 below summarizes the applicable compliance requirements for each of the five stationary engines at the Quinnesec Mill.

Table 2: Quinnesec RICE Unit Regulatory Requirements

Unit	Operation and Maintenance Requirements	Allowable Hours of Operation
Emergency Fire Water Pump	• Change oil and filter every 500 hours of operation or annually, whichever comes first • Inspect air cleaner every 1000 hours of operation or annually, whichever comes first • Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first (See Appendix A Cummins Maintenance Plan Example. Additional maintenance items are specified in SAP under Equip. # 08-21020-92.)	Hours of engine operation must be tracked and documented by use of a permanently installed non-resettable hour meter. Operating time must be attributed to one of the following categories: • **Emergency*** – No limit on hours of operation • **Non-Emergency** – 50 hours/year • **Maintenance/Readiness Testing** – 100 hours/year (100 hour limit includes time for non-emergency use) *Startup and idle time not to exceed 30 minutes.*
Lime Kiln Auxiliary Engine **Lime Mud Storage Tank Auxiliary Engine** **Admin Computer Room Backup Generator**	• Change oil and filter every 1440 hours of operation or annually, whichever comes first • Inspect spark plugs every 1440 hours of operation or annually, whichever comes first • Inspect all hoses and belts (if applicable) every 1440 hours of operation or annually, whichever comes first (See Appendix A Wolter Maintenance Plan Example. Additional maintenance items are specified in SAP under Equip. # 08-21020-92.)	No limit on hours of operation *Startup and idle time not to exceed 30 minutes.*

Table 2: Quinnesec RICE Unit Regulatory Requirements (Continued)

Unit	Operation and Maintenance Requirements	Allowable Hours of Operation
41 Computer Room Emergency Backup Generator	• Operate and maintain the certified SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator (§60.4243(b)(1)). (See Appendix A Wolter Maintenance Plan Example. Additonal maintenance items are specified in SAP under Equip. # 65-31316-18.)	Hours of engine operation must be tracked and documented by use of a permanently installed non-resettable hour meter. Operating time must be attributed to one of the following categories: • **Emergency*** – No limit on hours of operation • **Non-Emergency** – 50 hours/year • **Maintenance/Readiness Testing** – 100 hours/year (100 hour limit includes time for non-emergency use) *Startup and idle time not to exceed 30 minutes.*

*See definition of *Emergency Stationary Engine* for applicable emergency use.

Maintenance

The maintenance of the Quinnesec Mill stationary engines is conducted by Quinnesec Mill personnel or contracted service technicians (i.e., Wolter, Fairchild, Cummins). Preventative maintenance schedules are set up in the SAP Maintenance Scheduling and Tracking System and/or are available from the service provider. SAP maintenance plan numbers and /or service providers are specified in Table 1 above. Example service provider maintenance plans are included in Appendix A.

- **Maintenance Plans for RICE Units (Kiln area engines and Admin computer backup generator) -** Stationary RICE engines must be operated and maintained according to the manufacturer's emission-related operation and maintenance instructions or a maintenance plan which provides, to the extent practicable, for the maintenance and operation of the

engine in a manner consistent with good air pollution control practice for minimizing emissions. Maintenance plans must include the minimum maintenance activities specified in Table 2.

- **Maintenance Plan for EPA Certified SI-ICE Unit (41 computer emergency backup generator) -** Certified engines must be operated and maintained according to the manufacturer's emission-related written instructions, as specified in Table 2. Note that failure to do this will result in the engine being considered non-certified. Non-certified engines require an appropriate maintenance plan to be developed and implemented. Also, non-certified engines require pollutant emissions performance tests to demonstrate the engine is in compliance with the applicable emission standards.

- **Maintenance Documentation -** All applicable stationary engine maintenance activities and associated hour meter readings (if required) must be documented and made available to the Environmental Air Engineer. External service providers must provide this information to the Environmental Air Engineer. Maintenance activities conducted by the Quinnesec Mill must be documented in SAP or provided to the Environmental Air Engineer.

- **Major Repairs –** Any major repair on a stationary engine (having a potential cost greater than 50% of the cost of a new, comparable engine) may result in reclassification of the engine and changes to engine compliance requirements. The Environmental Air Engineer must evaluate major repairs before they are completed to determine if compliance can still be met after the repairs. It may be necessary to replace the engine with a new EPA certified engine instead of making major repairs.

Purchasing New or Replacement Engines

Before a new or replacement stationary engine is purchased, the project must be reviewed with Environmental Air Engineer to ensure the engine will meet regulatory requirements for its intended purpose.

Responsibilities

1. Operations, Maintenance, Plant Protection and external service providers are responsible for operating and maintaining stationary engines in accordance with requirements in Table 2, as applicable to their area of responsibility. Preventative and corrective maintenance must be documented and made available to the Environmental Air Engineer.

2. Operations, Maintenance, Plant Protection and service technicians are responsible for documenting, engine operating hours, reasons for operation, and ensuring operating time does not exceed the allowable hours of operation specified in Table 2, as applicable to their area of responsibility.

3. Prior to purchase, major repair, or replacement of any stationary engine the project details must be reviewed with the Environmental Air Engineer. This is the responsibility of Operations, Engineering, Maintenance, and/or Purchasing (as applicable).

4. The Environmental Air Engineer must review all new engines, replacement engines, and major engine repairs to determine applicable compliance requirements. These requirements must be communicated as appropriate to ensure the engine can perform the desired function while meeting stationary engine compliance requirements. The Air Engineer will update the Emergency Stationary Engine Plan as necessary.

5. The Environmental Air Engineer is responsible for maintaining stationary engine compliance information and documentation.

Appendix A – Example Maintenance Plans

Cummins Sales and Service

PLANNED MAINTENANCE CHECKLIST
FULL SERVICE

CUSTOMER DETAILS			
CUSTOMER:	VERSO PAPER - 65890	DATE:	11/19/18
ADDRESS:	W6791 US HWY 2 QUINNESEC MI 49876	SERVICE ORDER #:	165843
		FA JOB ID:	J117096
SITE NAME:	VERSO PAPER - W6791 BLDG	TECHNICIAN:	Nathan Firgens
CONTACT NAME:	MARK BAGNIESCHI	CONTACT EMAIL:	mark.bagnieschi@versoco.com
ASSET NAME:	FIRE PUMP	CONTACT TEL:	906-7793505

PRODUCT DETAILS		SECONDARY PRODUCT DETAILS:	
PRODUCT MANUFACTURER:	FIREPUMP	MANUFACTURER:	
PRODUCT MODEL:	6C8.3	MODEL:	
PRODUCT SERIAL:	46101310	SERIAL:	
PROD HOURS / MILES / KM:	236.0	HOURS / MILES / KM:	

PASS	N/A	NEEDS ATTN.	
✓			A. PRE-OPERATIONAL CHECKS

B. BATTERIES AND BATTERY CHARGER

Battery install date: 7/17 Float Volts: 13.1 Current: 0.2

Record highest and lowest specific gravity measured:

High: 1.3 Low: 1.275

Battery load test: Test CCA: 1400 Ambient temp:

Battery 1:	Float Volts:	12.8	Hold Volts:	10.2	Pass/Fail: Pass
Battery 2:	Float Volts:	12.8	Hold Volts:	10.1	Pass/Fail: Pass
Battery 3:	Float Volts:		Hold Volts:		Pass/Fail:
Battery 4:	Float Volts:		Hold Volts:		Pass/Fail:

C. COOLING SYSTEM

Last coolant fill date: Unknown Last coolant maint date (Belts, hoses, coolant): Unknown

Jacket water temp: 119 °F Cooling system pressure: NA PSI

Coolant Properties:

Freeze point: -35 DCA Concentration: 2.8 PH level: Pass

Sulfates: Pass Chlorides: Pass Appearance: Ok

LTA Coolant:

Freeze point: NA Appearance: NA PH level: NA

PASS	N/A	NEEDS ATTN.	
✓			D. GENSET CONTROLS AND ACCESSORIES
	✓		E. MAIN ALTERNATOR
✓			F. FUEL SYSTEM

Main tank fuel level:
Second Main tank fuel level:
Day tank fuel level:
Fuel pressure: NA Running: NA Loaded: NA

✓			G. INTAKE AND EXHAUST SYSTEMS
✓			H. ENGINE AND LUBRICATION SYSTEM
	✓		I. GENERATOR OPERATIONS
✓			J. LUBRICATION OIL AND FILTRATION SERVICE
	✓		K. TRANSFER SWITCH / SWITCHGEAR

Measure and record utility / source one voltage:

✓			L. SYSTEM OPERATIONAL TEST

Genset test without load, load test not permitted by:

Record engine and load data:

Oil pressure:	75	Oil Temperature:	188	Coolant temp:	180
Battery Voltage:	13.8	Engine speed:	1650	Exhaust temp:	367
Coolant press:	NA	Blowby flow:	NA	LTA temp:	NA
Genset Voltage:	NA	Genset freq/Hz	NA	Load PF:	NA

Current:

A:	NA	B:	NA	C:	NA
Load kW:	NA	Load kVA:	NA	Load kVAR:	NA

Duration system test: 5 Minutes

✓			M. SITE PRE-DEPARTURE VERIFICATION

Comments:
No issues found with fire pump. Changed oil, oil filter, fuel filter and air filter. Tested coolant and batteries, both tested satisfactory. Ran fire pump 5 minutes for operational inspection, no issues found.

	TECHNICIAN NAME:	TECHNICIAN SIGNATURE:	DATE:
Cummins OneBMS Charlotte NC 28241	Nathan Firgens	Nathan Firgens	11/19/18
	CUSTOMER NAME:	CUSTOMER SIGNATURE:	DATE:

Cummins Sales and Service

PLANNED MAINTENANCE CHECKLIST
FULL SERVICE

Below is the scope of work performed during the above planned maintenance checklist. Any additional repairs, parts, or service which are required will be brought to the attention of the owner. Repairs will only be made after proper authorization from the owner is given to Cummins Sales and Service. Any additional repairs, maintenance or service performed by Cummins Sales and Service for a Planned Maintenance Agreement holder will be at Cummins Sales and Service labor rates.

A. PRE-OPERATIONAL CHECKS

1. All equipment automated, no alarms or faults on controls
2. Check fluid levels and observe for leaks. Oil, Fuel and Coolant
3. Verify battery chargers, component heaters and accessories are operational
4. Safety Audit, Lock Out/ Tag Out Procedures Followed, Safe Service Operations

B. BATTERIES AND BATTERY CHARGER

1. Check battery charger functions and record voltage and current
2. Cable connections, termination cleanliness and security
3. Check electrolyte level, vent caps and specific gravity of all cells in the starting battery system

3.a Record highest and lowest specific gravity measured.

4. Perform Battery load test on all starting batteries and record CCA, ambient temperature, float volts, hold volts, and if the battery passed or failed testing.

C. ENGINE COOLING SYSTEM

1. Inspect all hoses and clamps for leaks and condition
2. Inspect radiator cap and filler neck condition
3. Inspect drive belts, observe alignment and deflection
4. Confirm proper coolant heater operation and record jacket water temperature
5. Verify Coolant properties and record the freeze point, DCA concentration, PH level, Sulfates, Chlorides, and appearance.
6. Inspect radiator surfaces, shrouds and barriers for obstruction, build up and mechanical damages
7. Verify LTA coolant properties and record the freeze point, PH level, and appearance (if applicable)
8. Optional coolant sampling

D. GENSET CONTROLS AND ACCESSORIES

1. Check all engine mounted wiring, senders and devices
2. Check all control mounted components and wiring
3. Check all connecting plugs
4. Check all accessory components and wiring
5. Function test lights and indicators

E. MAIN ALTERNATOR

1. Remove covers and inspect terminals, wiring and component
2. Visually inspect main rotor and stator
3. Visually inspect exciter components and PMG (where equipped)
4. Manually operate generator main breaker(s) open and closed

F. FUEL SYSTEM

1. Check main and secondary (if applicable) tank fuel and record levels
2. Check day tank fuel and record level (if applicable)
3. Check day tank controls and pumps. Test operate day tank controls where available (if applicable)
4. Check all fuel hose, clamps, pipes, components and fittings
5. Check fuel pressure and record readings running and loaded
6. Check governor linkage (if applicable)
7. Water in Fuel Test - Sub-base, day tanks or as noted on agreement
8. Rupture/ Containment Basin Inspection (if applicable)

G. INTAKE AND EXHAUST SYSTEMS

1. Check air cleaner element
2. Check intake system
3. Check exhaust system and rain cap
4. Check louver operations (if applicable)

H. ENGINE AND LUBRICATION SYSTEM

1. Check lubrication system
2. Check crankcase ventilation system
3. Check spark ignited ignition system (if applicable)

I. GENERATOR OPERATIONS

1. Start and observe generator and equipment operations
2. Verify engine and generator safeties as applicable

J. LUBRICATION OIL AND FILTRATION SERVICE

1. Change lube oil
2. Change lube oil filters, apply date and run hours to filter canister
3. Change fuel filters, apply date and run hours to filter canister
4. Drain sediment from coolant heater where equipped
5. Change coolant filters as equipped, apply date, freeze point and dca concentration to canister
6. Pressure test cooling system and record PSI readings
7. Check fan, water pump, drives and pulleys
8. Grease serviceable bearings
9. Post Lube service operation of Genset unloaded
10. Oil sample for laboratory analysis when recommended*
11. Change crankcase ventilation filter (if applicable)

K. TRANSFER SWITCH/ SWITCHGEAR

1. Inspect all power and control wiring
2. Inspect switch mechanism and enclosure
3. Inspect controls and time delay settings
4. Check exercise clock
5. Verify remote start control operation
6. Measure and record utility/ source one voltage

L. SYSTEM OPERATIONAL TESTS

1. Genset test with or without load, if not allowed document decision maker
2. During test without load record engine oil pressure, oil temperature, coolant temperature, battery voltage, engine speed, exhaust temperature, coolant pressure, blowby flow, LTA temperature. Also record generator voltage on all phases, frequency, current on all phases, load PF, load KW Load KVA and Load KVAR.
3. Record duration of system test in minutes

M. SITE PRE-DEPARTURE VERIFICATION

1. All applied energy source lock out devices removed
2. All controls and components in AUTO/REMOTE
3. All GENSET breakers ON/CLOSED (except power operated paralleling breakers)
4. Battery Charger operational/ breaker ON
5. Component heaters enabled/ breaker ON
6. Site Cleanup

Wolter Power Systems

CHECKLIST – Preventative Maintenance

3125 Intertech Dr., P.O. Box 430, Brookfield, WI 53045
Phone: (262) 790-6230 • (800) 236-1625 • Fax: (262) 790-6229
www.wolterps.com

		Date:	10/3/17
WO/SM#:	SM17512635	Location:	W6791 HWY 2 QUINNESEC, MI 49876
Customer:	VERSO PAPER QUINNESEC MILL	Cust. phone:	BILL-906-3964737
System rating:	130 KW	Engine model S/N:	MODEL- 6.8I SERIAL- E172A-150410-1050043
Engine hours:	113.9	Generator model S/N:	MODEL- 11895360100 SERIAL- 2105847

Engine oil level at start of inspection: OKAY		Comments	
1. Oil level	☒Y ☐N	OKAY	
2. Oil type		15W-40	
3. Coolant level	☒Y ☐N	OKAY	
4. Coolant type		STANDARD	
4. Fuel level	☐Y ☐N	NATURAL GAS	
5. Batteries	Type: G31	Qty: 1	System Voltage: 12

CELL CONDITIONS			
Spec. Grav / Volt	Spec. Grav / Volt	Spec. Grav / Volt	Spec. Grav / Volt
1. 1275/N/A	1. N/A/N/A	1. N/A/N/A	1. N/A/N/A
2. 1275/N/A	2. N/A/N/A	2. N/A/N/A	2. N/A/N/A
3. 1275/N/A	3. N/A/N/A	3. N/A/N/A	3. N/A/N/A
4. 1275/N/A	4. N/A/N/A	4. N/A/N/A	4. N/A/N/A
5. 1275/N/A	5. N/A/N/A	5. N/A/N/A	5. N/A/N/A
6. 1275/N/A	6. N/A/N/A	6. N/A/N/A	6. N/A/N/A

AMP LOAD TEST						
1.	250	AMPS @	10	sec. held	11.2	volts
2.	N/A	AMPS @	N/A	sec. held	N/A	volts
3.	N/A	AMPS @	N/A	sec. held	N/A	volts
4.	N/A	AMPS @	N/A	sec. held	N/A	volts

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1. Battery charger		Float volt: 13.3V	Equalize volt: N/A	OKAY
2. Coolant condition		Freeze point: -30 F		OKAY
3. Coolant hoses				OKAY
4. Radiator condition				OKAY
5. Radiator cap		14 PSI	Held 14 PSI	OKAY
6. Fan guard				OKAY
7. Radiator fan				OKAY
8. Fan belts		#1 P/N: GENERAC	#2 P/N: N/A	OKAY
9. Fan idler bearings				OKAY
10. Water pump				OKAY
11. Water pump belt		P/N: GENERAC		OKAY
12. Alternator output volt: 14.1V				OKAY
13. Alternator belt		P/N: GENERAC		OKAY
14. Air louver condition				OKAY
15. Engine heaters	Wattage: 1500	Mfg: HOT START	Qty: 1 P/N: 084918G	OKAY
16. Heater hose condition				OKAY
17. Coolant filter	Qty: N/A		P/N: N/A	N/A
18. Air filters	Qty: 1		P/N: 42096	OKAY
19. Fuel filters	Qty: N/A	Water separator P/N: N/A	Qty: N/A Filter P/N: N/A	N/A
20. Oil filters	Qty: 1	Primary P/N: 0D5419	Qty: N/A By pass P/N: N/A	OKAY
21. Oil lines				OKAY
22. Fuel, oil, or coolant leaks				OKAY
23. Fuel lines				OKAY
24. Fuel supply pump				N/A
25. Ignition system	Cond. P/N: N/A	Point P/N: N/A	Plug P/N: GENERAC	OKAY
26. Generator end bearings				OKAY
27. Check load conductors for chafing				OKAY
28. Electrical wiring & connections				OKAY
29. Control panel				OKAY
30. Emergency shutdowns				OKAY
31. Prealarms				OKAY
32. Starter condition				OKAY
33. Daytank operational level: N/A				N/A
34. Exhaust system				OKAY
35. Vibration isolators				OKAY
36. Remote annunciator				N/A
37. Paint condition				OKAY
38. Automatic transfer switch				OKAY
39. Exercise clock	Day: N/A	Time: N/A	w/load: N/A w/o load: N/A	OKAY
40. Running conditions	w/o load	with load	w/o load with load	OKAY

oil pressure	79	N/A	fuel pressure in	N/A	N/A
oil temp	N/A	N/A	fuel pressure out	N/A	N/A
water temp	192	N/A	voltage	482	N/A
amperage	0	N/A	hertz	60	N/A

Amount of oil/coolant used to service this equipment: Engine Oil: 0 Coolant: 0

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Notes & Recommendations: Battery is not dated, may want to replace if it is older than 4 years, during the next visit.
Air filter is starting to get dirty and may want to replace during the next visit.
Generator is in auto and the breaker is closed.

Aaron Kirchoff

Customer Signature

Technician Signature

10/3/17

Date

Plan Revision Record

Revision Date	Description of Change	Reviewer
11/16/17	Original document	P. LaFleur
3/14/18	Revised LK aux engine unit info in Table 1 (1996 engine) and in Requirements sections on page 2.	P. LaFleur
	Maintenance Requirements for SI-ICE Units Meeting the Non-Emergency Standards – clarified performance testing requirements for non-certified engines.	
	Added Definitions	
7/2/19	Based on a recent regulatory evaluation by Trinity Consultants the kiln area and admin computer engines were reclassified as non-emergency with no operating time restrictions. The 41 computer engine was reclassified as emergency with operating time restrictions.	P. LaFleur
1/29/24	Removed references to Verso, changed company logo. Changed document owner to Paula LaFleur. Added review and revision dates in header.	P. LaFleur
2/16/24	Changed document owner to Environmental.	P. LaFleur

QUINNESEC MILL

Continuous Monitoring System Quality Assurance Plan

CEMS/COMS

8/19/2024

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1 INTRODUCTION

It is the policy of the Quinnesec Mill to efficiently operate and maintain its facility in accordance with good operating practices (GOP) and applicable environmental regulations. The Quinnesec Mill is committed to ensuring that all environmental systems are operating within acceptable limits and that its operations are in compliance with environmental permits. The Quinnesec Mill recognizes that the reliability and acceptability of the continuous emission monitoring system (CEMS) and continuous opacity monitoring system (COMS) data depend on completion of all activities stipulated in a well-defined quality assurance and quality control plan (QA/QC Plan or Plan). The objective of this QA/QC Plan is to define the necessary activities to ensure that the CMS data quality is maintained at acceptable levels and regulatory requirements.

QA and QC procedures serve independent functions. QC is the series of activities performed to ensure that a quality product or service is produced. QA involves those activities undertaken to determine that the QC functions are effective in maintaining the minimum quality of the product (i.e., CEMS/COMS data). QC functions often comprise a series of frequent internal checks, such as system inspections, periodic calibrations, and routine maintenance. QA involves external checks to confirm that the quality control procedures are adequate to meet the level of precision required for the system. External quality assurance evaluations may include independent system audits, third party sampling and analysis, and/or comparisons to known calibration standards. This Plan encompasses both QA and QC functions and identifies which function is fulfilled by the specific activity.

The Quinnesec Mill owns and operates four emission units which have applicable CEMS/COMS monitoring requirements:

Recovery Furnace – The recovery furnace is a process unit in the chemical recovery cycle which combusts black liquor solids to recover digester cooking chemicals. Natural gas is used for startup, shutdown, and brief periods of furnace stabilization. The recovery furnace is also a backup

incineration device for the treatment of high volume low concentration (HVLC) gases. The Recovery Furnace is equipped with an electrostatic precipitator for particulate control.

Lime Kiln – The lime kiln is a process unit in the chemical recovery cycle which converts lime mud into burnt lime. Natural gas is combusted in the lime kiln. The lime kiln is also an incineration device for the treatment of low volume high concentration (LVHC) gases and foul methanol. The lime kiln is equipped with a Venturi scrubber for emissions control.

Waste Fuel Boiler – The Waste Fuel Boiler is a primarily wood fueled boiler which is also capable of combusting natural gas and coal. The Waste Fuel Boiler is also an incineration device for the treatment of high volume low concentration (HVLC) gases and a backup incineration device for the treatment of low volume high concentration (LVHC) gases. The Waste Fuel Boiler is equipped with a multicyclone collector and an electrostatic precipitator for particulate control.

Package Boiler – The Package Boiler is a natural gas fired boiler.

2 POLLUTANT CEMS/CERMS

The continuous emission monitoring systems and continuous emission rate monitoring systems (CERMS) consist of sampling and conditioning systems, pollutant analyzers, oxygen (O_2) analyzers, and a data acquisition and handling system (DAHS). All of these components are necessary to determine emission rates in terms of lbs/MMBtu or PPM O_2 corrected. In addition, the Waste Fuel Boiler pollutant gas monitoring system includes a flow meter which is used to convert NOx and SO_2 concentrations to pounds per hour (lbs/hour) emission rate. Per The Quinnesec Mill's Title V Renewable Operating Perming, a fixed flow of 30,000 DSCFM is used to convert Package Boiler emissions concentration to a lbs/hour emission rate. This section of the QAP addresses the quality assurance requirements for the pollutant gas concentration monitoring systems. Information regarding the ancillary monitoring systems used to determine oxygen (and

oxygen as a surrogate for CO2) and flow can be found elsewhere in this QAP as noted in Table 2-1.

Table 2-1
Quinnesec Mill CEMS/CERMS Monitoring System Summary

Affected Source	Monitoring System	Component(s)	QAP Reference
Recovery Furnace	NOx O_2 corrected ppm	NO_X	Section 2
		O_2	Section 3
	SO2 O_2 corrected ppm	SO2	Section 2
		O_2	Section 3
	CO O_2 corrected ppm	CO	Section 2
		O_2	Section 3
	TRS O_2 corrected ppm	TRS	Section 2
		O_2	Section 3
Lime Kiln	TRS O_2 corrected ppm	TRS	Section 2
		O_2	Section 3
Waste Fuel Boiler	lbs NO_X/MMBtu	NO_X	Section 2
		O_2	Section 3
	lbs NOx/hour	NOx	Section 2
		Stack Flow	Section 5
	lbs SO2/MMBtu	SO_2	Section 2
		O_2	Section 3
	lbs SO2/hour	SO_2	Section 2
		Stack Flow	Section 5
	CO2 metric tons	CO_2	Section 4
		Stack Flow	Section 5
Package Boiler	lbs NO_X/MMBtu	NO_X	Section 2
		O_2	Section 3
	lbs NOx/hour	NOx	Section 2
		Stack Flow (fixed)	NA
	lbs CO/hour	CO	Section 2
		Stack Flow (fixed)	NA
	lbs CO/MMBtu	CO	Section 2
		O_2	Section 3

2.1 AFFECTED SOURCES

The CEMS are installed, operated, and maintained on the sources listed in Table 2-2.

Table 2-2
Affected Sources Summary
Quinnesec Mill

ROP Emission Unit ID	Emission Unit Description
EU0815	Recovery Furnace
EU1121	Waste Fuel Boiler
EU1122	Package Boiler
EU0917	Lime Kiln

2.2 EMISSIONS LIMITATIONS

The CEMS are operated to demonstrate compliance with the emission limitations summarized in Table 2-3.

Table 2-3
Emission Limitation Summary
Quinnesec Mill

Pollutant	Emission Unit	Emission Limitation	Units	Averaging Period
NOx	Recovery Furnace	110	ppm @ 8% O_2	24-hour rolling
	Waste Fuel Boiler [natural gas]	0.20	lbs/MMBtu	3-hour block
	Waste Fuel Boiler [wood with gas]	0.30	lbs/MMBtu	3-hour block
	Waste Fuel Boiler [coal and/or wood]	0.70	lbs/MMBtu	3-hour block
	Waste Fuel Boiler	436.8	lbs/hour	1-hour
	Package Boiler	0.10	lbs/MMBtu	30-day rolling
		41.9	lbs/hour	hourly
SO_2	Recovery Furnace	50	ppm @ 8% O_2	24-hour (daily)
	Waste Fuel Boiler [coal, no CVGs]	1.2	lbs/MMBtu	3-hour block
	Waste Fuel Boiler [no CVGs]	476	lbs/hour	1-hour
	Waste Fuel Boiler [with CVGs]	1016	lbs/hour	1-hour
CO	Recovery Furnace	425	ppm @ 8% O_2	3-hour rolling
		380	ppm @ 8% O_2	8-hour rolling
	Package Boiler [>80,000 kpph steam flow]	0.12	lbs/MMBtu	1-hour
	Package Boiler [>80,000 kpph steam flow]	50.3	lbs/hr	1-hour
	Package Boiler [<80,000 kpph steam flow and transition times]	25.5	lbs/hr	1-hour
	Package Boiler [<80,000 kpph steam flow and transition times]	195	ppm	1-hour
TRS	Recovery Furnace	5.0	ppmvd @ 8% O_2	12-hour block
	Lime Kiln	8.0	ppmvd @ 10% O_2	12-hour block

2.3 MONITORING REQUIREMENTS

CEMS are required pursuant to the applicable monitoring regulations summarized in Table 2-4.

Table 2-4
Applicable Monitoring Requirements
Quinnesec Mill

Pollutant CEMS	Emission Unit	Applicable Monitoring Regulation	Quality Assurance Activity Basis
NOx	Recovery Furnace	40 CFR 52.21 (R 336.2803, 336.2804, 336.2810), R 336.1205(1)(a)&(b)	40 CFR 60 Appendix F, P1
	Waste Fuel Boiler	40 CFR 60 Subpart D, 40 CFR 52.21 (R 336.2803, 336.2804)	
	Package Boiler	40 CFR 60 Subpart Db, 40 CFR 52.21	
SO_2	Recovery Furnace	40 CFR 52.21 (R 336.2803, 336.2804), R 336.1205(1)(a)&(b)	
	Waste Fuel Boiler	40 CFR 60 Subpart D, 40 CFR 52.21 (R 336.2803, 336.2804)	
CO	Recovery Furnace	40 CFR 52.21 (R 336.2803, 336.2804, 336.2810), R 336.1205(1)(a)&(b)	
	Package Boiler	40 CFR 52.21(j)(3)	
TRS	Recovery Furnace	40 CFR 60 Subpart BB, 40 CFR 52.21(j)(3), R 336.1224, 336.1225	40 CFR §60.13(d)(1) 40 CFR 60 Appendix F, P1
	Lime Kiln	40 CFR 60 Subpart BB, 40 CFR 52.21(j)(3), R 336.1224, 336.1225	40 CFR §60.13(d)(1) 40 CFR 60 Appendix F, P1

2.3.1 Monitoring System Descriptions

2.3.1.1 Sampling and Conditioning System

Stack gas is delivered to the analyzers via an extractive sampling and conditioning system. The heated sample probe is installed at a specific location in the stack to collect the most representative stack gas samples. The probe, filter, and sample line are heated to prevent water condensation in the sampling system. The moisture in the stack gas is removed prior to the sample pump and analyzer using a condenser type moisture removal system. The condensers cool the gas below the dew point (using a thermoelectric

cooler), and then remove the condensed liquid water from the gas stream. Water removal is performed automatically to prevent filling the condensate trap and flooding the sampling line. The conditioned stack gas is passed through a particulate filter and a diaphragm sample pumps prior to being delivered to the analyzer rack. The sampling system is designed in a manner not to pressurize the analyzer during normal sampling or routine calibrations.

2.3.1.2 NO_X Analyzer

The concentration of nitrogen oxides (NO_X) is measured by using a chemiluminescence NO_X analyzer. Chemiluminescence is the emission of light produced as a result of a chemical reaction. A chemiluminescence nitrogen oxide (NO) and NO_X monitor measures the amount of light generated by the reaction of NO present in the stack gas with ozone (O_3). This monitor uses an ozone generator and a heated converter to reduce the nitrogen dioxide (NO_2) present in the stack gas to NO before reacting with O_3.

The monitor can measure both NO or NO_X by sequencing the NO and O_3 reaction. NO present in the stack gas is measured by bypassing the converter and going directly to the reaction chamber. NO_X (i.e., NO and NO_2) is measured by using the converter to reduce NO_2 to NO prior to the reaction chamber. NO_2 can be determined by subtracting the NO measured by the first sequence from the total NO_X (i.e., NO and NO_2) measured in the sequence.

2.3.1.3 SO2 Analyzer

The SO_2 analyzer measures SO_2 concentrations using the fluorescent property of the SO_2 molecules. Fluorescence occurs when a molecule absorbs light at one wavelength; as a result of the absorbed energy, the molecule emits light at a different wavelength. The analyzer uses light (from a pulsed infrared light source) to irradiate the gas sample. The light radiated back from the sample is measured by the sensor, after filtering to select a narrow bandwidth of the fluorescent radiation. This secondary emission light output is proportional to the concentration of SO_2 in the stack gas.

2.3.1.4 CO Analyzer

The CO analyzer operates on the principle that carbon monoxide (CO) absorbs infrared radiation at a wavelength of 4.6 microns. Gas Filter Correlation (GFC) is a particular infrared technique that selectively measures light absorption uniquely due to CO by the ratio of sample-absorbed light to a filtered reference measurement. Light from a broadband infrared source passes through a gas filter wheel alternating between N_2 and CO filled cells and passes through a narrow bandpass interference filter before passing into the volume containing sample gas. Light that passes through the N_2 cell is absorbed by CO in the sample gas normally as the *sample* signal; light that passes through the CO cell is already blocked where CO absorbs, and so is unchanged by sample CO as the *reference*. The ratio of "sample" to "reference" (S/R) is acquired at high speeds and corrects for light intensity and other changes to achieve precision measurement. Because the filtering is achieved with CO gas itself, the GFC technique is specific for CO. The so-called "spectral resolution" of the technique is such that the measured ratio is partly but not strictly linear as predicted by the well-known "Beer's Law." The analyzer uses an internally stored calibration curve to accurately linearize the instrument output over any range up to a concentration of 10,000 ppm.

This secondary emission light output is proportional to the concentration of CO in the stack gas.

2.3.1.5 TRS Analyzer

A sulfur dioxide (SO_2) analyzer functions as the TRS detector. A dry-base SO_2 regenerative scrubber removes only the SO_2 present in the sample stream. The TRS compounds present in the sample stream are then converted to SO_2 by a thermal oxidizer. To ensure that all of the TRS compounds are converted, a thermal oxidizer is maintained at approximately 1500 °F. The analyzer measures SO_2 concentrations using the fluorescent property of the SO_2 molecules. Fluorescence occurs when a molecule absorbs light at one wavelength; as a result of the absorbed energy, the molecule emits light at a different wavelength. The analyzer uses light (from a pulsed infrared light source) to irradiate the gas sample. The light radiated back from the sample is measured by the sensor, after filtering to select a narrow bandwidth of the fluorescent radiation. This secondary emission light output is proportional to the concentration of SO_2 in the stack gas.

Table 2-5
CEMS Major Component Summary
Quinnesec Mill

Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Recovery Furnace									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180240002	25	0-25	%	NA	dry	Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
NO_X Analyzer	Thermo Environmental Instruments, Inc.	42iQ	1180090013	500	0-500	ppmv	50/1	dry	Span is not defined in the applicable standards for the Recovery Furnace (i.e., 52.21(j)(3). As such, The Quinnesec Mill has selected the span of 500 ppm
SO2 Analyzer	Thermo Environmental Instruments, Inc.	43iQ	1180090009	1000	0-1000	ppmv	50/1	dry	Span is not defined in the applicable standards for the Recovery Furnace (i.e., 52.21(j)(3). As such, The Quinnesec Mill has selected the span of 1000 ppm
CO Analyzer	Thermo Environmental Instruments, Inc.	48iQ	1170680002	2000	0-2000	ppmv	50/1	dry	Span is not defined in the applicable standards for the Recovery Furnace (i.e., 52.21(j)(3). As such, The Quinnesec Mill has selected the span of 2000 ppm
TRS Analyzer	Thermo Scientific	43iQ-ACN	1180090010	30	0 – 30	ppmv	50/1	dry	Span defined in §60.284(a)(2)(i).
SO_2 Scrubber	Thermo Scientific	SCU101DC							Dry-base SO_2 regenerative scrubber removes the SO_2 present in the sample stream.
Thermal Oxidizer	Thermo Scientific	TO1000							TRS compounds present in the sample stream are converted to SO_2 by a thermal oxidizer maintained at approximately 1500 °F.
DAHS	VIM	CEMLink6							
Waste Fuel Boiler									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180530001	25	0-25	%	NA	dry	Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
NO_X Analyzer	Thermo Environmental Instruments	42iQ	1180030057	1000	0-1000	ppmv	50/1	dry	Span defined in 40 CFR §60.45(c)(3)(i).
SO2 Analyzer	Thermo Environmental Instruments	43iQ	1180090017	1500	0-1500	ppmv	50/1	dry	Span defined in 40 CFR §60.45(c)(3)(i).
DAHS	VIM	CEMLink6							

Table 2-6
CEMS Major Component Summary
Quinnesec Mill

Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Package Boiler									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180390002	25	0-25	%	NA	dry	Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
NO_X Analyzer	Thermo Environmental Instruments, Inc.	42iQ	1180090011	500	0-500	ppmv	50/1	dry	Span defined in 40 CFR §60.45(c)(3)(i).
CO Analyzer	Thermo Environmental Instruments	48iQ	1180930081	300	0-300	ppmv	50/1	dry	Span defined in 40 CFR §60.45(c)(3)(i).
DAHS	VIM	CEMLink6							
Lime Kiln									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180570001	25	0-25	%	NA	dry	Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
TRS Analyzer	Thermo Scientific	43iQ-ACN	1180090014	30	0 – 30	ppmv	50/1	dry	Span defined in §60.284(a)(2)(i).
SO_2 Scrubber	Thermo Scientific	SCU101DC							Dry-base SO_2 regenerative scrubber removes the SO_2 present in the sample stream.
Thermal Oxidizer	Thermo Scientific	TO1000							TRS compounds present in the sample stream are converted to SO_2 by a thermal oxidizer maintained at approximately 1500 °F.
DAHS	VIM	CEMLink6							

2.4 INSTALLATION AND INITIAL CERTIFICATION

The installation and initial certification of the continuous emissions monitoring systems was completed in accordance with applicable Performance Specification (PS) in 40 CFR 60 Appendix B. Documentation of the certification is located in the Environmental Files. Initial certification of the concentration monitoring systems will only be required upon the installation of a new concentration monitoring system. The applicable PS is summarized in Table 2-7.

Table 2-7
Applicable Performance Specification
Quinnesec Mill

Analyzer	Applicable Performance Specification (PS)	Reference
NO_X, SO2	PS2	40 CFR 60 Appendix B
CO	PS4, PS4A	40 CFR 60 Appendix B
TRS	PS5	40 CFR 60 Appendix B

2.5 ONGOING QUALITY ASSURANCE ACTIVITIES

The quality of the data collected by the CEMS is assessed by the completion of ongoing quality assurance (QA) procedures. The QA procedures for the concentration monitoring systems are summarized in Table 2-8.

Table 2-8
Ongoing Quality Assurance Frequency
Quinnesec Mill

Monitoring System	Daily	Weekly	Monthly	Quarterly	Semi-annually	Annual
NO_X, SO_2, CO, TRS	CDT [a] Section 2.5.1.1			CGA [b] Section 2.5.2.1		RATA [c] Section 2.5.3.1

[a] Calibration Drift Test (CDT)
[b] Cylinder Gas Audit (CGA) - not required for quarter when RATA is conducted
[c] Relative Accuracy Test Audit (RATA)

2.5.1 Daily

The following QA activities are completed at least once daily (i.e., every 24 hours) on the pollutant gas concentration monitoring systems. The daily QA activities performed on the pollutant gas concentration monitoring system include a calibration drift test (CDT).

2.5.1.1 Calibration Drift Test (CDT)

A calibration drift test (CDT) is completed by the Mill pursuant to 40 CFR 60 Appendix F, P1 §4.1 at least once every 24 hours in accordance with the procedures described herein. A CDT is automatically initiated every 24 hours by the Programmable Logic Controller (PLC). The PLC energizes normally closed solenoid valves to allow the reference gas to be introduced to the sample probe. The reference gas is transported from the gas cylinder up to the sample probe and then travels down to the analyzer rack through the stack sample lines. This includes all of the sample line filters, dilution systems, scrubbers, conditioners, and other sampling system components (as applicable). The solenoid valve is energized introducing the reference gas for a pre-determined time interval adequate for the CEMS to measure and record a stable response. A zero and span gas check are run at least every 24-hours. Additional CDT, if required, may be initiated by the Mill manually throughout the 24 hour period.

2.5.1.1.1 Span Value

Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the concentration specified for the affected source category in an applicable subpart of the regulations that is used to set the calibration gas concentration and in determining calibration drift. The span values for the pollutant gas monitoring systems are summarized in Table 2-9.

Table 2-9
Analyzer Span Summary
Quinnesec Mill

Analyzer	Emission Unit	Span [a]	Reference
NOx	Recovery Furnace	500 ppm[b]	NA
	Waste Fuel Boiler	1000 ppm	40 CFR §60.45(c)(3)(i)
	Package Boiler	500 ppm	40 CFR §60.48b(e)(2)(i)
SO2	Recovery Furnace	1000 ppm[b]	NA
	Waste Fuel Boiler	1500 ppm	40 CFR §60.45(c)(3)(i)
CO	Recovery Furnace	2000 ppm[b]	NA
	Package Boiler	300 ppm[b]	NA
TRS	Recovery Furnace	30 ppm	40 CFR §60.284(a)(2)(i)
	Lime Kiln	30 ppm	40 CFR §60.284(a)(2)(i)

[a] Span is defined in 40 CFR 60 Appendix F §2.3 as the upper limit of a gas concentration measurement range that is specified for affected source categories in the applicable subpart of the regulation. Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the calibration portion of the measurement range as specified in the applicable regulation or other requirement. If the span is not specified in the applicable regulation or other requirement, then it must be a value approximately equivalent to two times the emission standard. For spans less than 500 ppm, the span value may either be rounded upward to the next highest multiple of 10 ppm, or to the next highest multiple of 100 ppm such that the equivalent emission concentration is not less than 30 percent of the selected span value.

[b] Span is not defined in the applicable standards (i.e., 52.21(j)(3). As such, The Quinnesec Mill has selected the span values specified in Table 2-9.

2.5.1.1.2 CDT Reference Gas Concentrations

Two (2) reference gas concentrations are utilized for the CDT. The two (2) reference gas concentrations are determined based on the applicable span value as defined in Section 2.5.1.1.1. The reference gas concentrations are zero or low (e.g., between 0 and 20% of span value) and upscale (e.g., 50 to 100% of span value). The low and upscale audit gases are U.S. EPA Protocol grade calibration gases. The reference gas concentrations that are used in the CDT are summarized in Table 2-10.

Table 2-10
CDT Reference Gas Summary
Quinnesec Mill

Analyzer	Emission Unit	Zero or Low [a],[c]	Upscale [b],[c]
NOx	Recovery Furnace	0 – 100 ppm	250 – 500 ppm
	Waste Fuel Boiler	0 – 200 ppm	500 – 1000 ppm
	Package Boiler	0 – 100 ppm	250 – 500 ppm
SO_2	Recovery Furnace	0 – 200 ppm	500 – 1000 ppm
	Waste Fuel Boiler	0 – 300 ppm	750 – 1500 ppm
CO	Recovery Furnace	0 – 400 ppm	1000 – 2000 ppm
	Package Boiler	0 – 60 ppm	150 – 300 ppm
TRS	Recovery Furnace and Lime Kiln	0 – 6.0 ppm	15.0 – 30.0 ppm

[a] Zero or low level reference gas is defined in 40 CFR §60.13(d)(1) as between 0 and 20% of the span value.
[b] Upscale level reference gas is defined in 40 CFR §60.13(d)(1) as between 50 and 100% of the span value.
[c] 40 CFR §60.13(d) is included by reference in 40 CFR 60 Subparts D, BB, and Appendix F, P1 §4.1.

2.5.1.1.3 CDT Calculation

The calibration drift for the analyzers are computed by the DAHS for each reference gas level as described in Equation 2-1.

Equation 2-1 $$CD = \frac{|R-A|}{SPAN} \times 100$$

Where:

CD = Calibration Drift as a percentage of the SPAN.
R = Reference value of zero or upscale concentration introduced into the monitoring system.
A = Actual monitoring system response to the reference value (R).
SPAN = Highest concentration monitor component is required to be capable of measuring as defined in Section 2.5.1.1.1.

2.5.1.1.4 CDT Pass/Fail Tolerance

Pursuant to 40 CFR §60.13(d)(1), the analyzers are adjusted whenever the zero CDT or the upscale CDT exceeds two (2) times the limit of the applicable performance specification of 2.5% (40 CFR Appendix B, PS 2) as specified in Table 2-11 below. Pursuant to 40 CFR 60 Appendix F, P1 §4.3, if the zero CDT or the upscale CDT exceeds twice (i.e., 2x) the applicable calibration drift performance specification, as specified in Table 2-11 for five (5), consecutive, daily periods, the CEMS is out-of-control (OOC). If either the zero (or low-level) or upscale-level CD result exceeds four times (i.e., 4x) the applicable drift specification of 2.5% (40 CFR Appendix B, PS 2), the CEMS is OOC.

If the calibration drift exceeds the specification limits listed in Table 2-11 for the appropriate monitor, the failure is indicated on the maintenance calibration report generated by the DAHS.

Table 2-11
CDT Pass/Fail Tolerance
Quinnesec Mill

Emission Unit	Analyzer	Adjustment Limit [a] (Data Valid)	Out-of-Control Limit [a] (Data Invalid)
Waste Fuel Boiler	NO_X	± 5.0% of Span OR ± 50.0 ppm NO_X	± 5.0% of Span OR ± 50.0 ppm NO_X for five (5) consecutive days
			OR
			± 10.0% of Span OR ± 100.0 ppm NO_X at any time
Recovery Furnace and Package Boiler	NO_X	± 5.0% of Span OR ± 25.0 ppm NO_X	± 5.0% of Span OR ± 25.0 ppm NO_X for five (5) consecutive days
			OR
			± 10.0% of Span OR ± 50.0 ppm NO_X at any time
Waste Fuel Boiler	SO2	± 5.0% of Span OR ± 75.0 ppm SO2	± 5.0% of Span OR ± 75.0 ppm SO2 for five (5) consecutive days
			OR
			± 10.0% of Span OR ± 150.0 ppm SO2 at any time
Recovery Furnace	SO2	± 5.0% of Span OR ± 25.0 ppm SO2	± 5.0% of Span OR ± 25.0 ppm SO2 for five (5) consecutive days
			OR
			± 10.0% of Span OR ± 50.0 ppm SO2 at any time
Package Boiler	CO	± 10.0% of Span OR ± 30.0 ppm CO	± 10.0% of Span OR ± 30.0 ppm CO for five (5) consecutive days
			OR
			± 20.0% of Span OR ± 60.0 ppm CO at any time

Recovery Furnace	CO	± 10.0% of Span OR ± 200.0 ppm CO	± 10.0% of Span OR ± 200.0 ppm CO for five (5) consecutive days
			OR
			± 20.0% of Span OR ± 400.0 ppm CO at any time
Recovery Furnace and Lime Kiln	TRS	± 10.0% of Span OR ± 3.0 ppm TRS	± 10.0% of Span OR ± 3.0 ppm TRS for five (5) consecutive days
			OR
			± 20.0% of Span OR ± 6.0 ppm TRS at any time

[(a)] Adjustments must be made to the monitoring system if the zero or upscale drift exceeds the drift tolerance by more than the listed value. Data is considered invalid and the CEMS is out-of-control (OOC) if the zero CDT or the upscale CDT exceeds twice the calibration drift limit specified in the applicable 40 CFR 60 Appendix B performance specification, as specified in Table 2-7 for five (5) consecutive, daily periods. If either the zero (or low-level) or upscale-level CD result exceeds four times the applicable performance specification calibration drift limit, the CEMS is also OOC.

2.5.1.1.5 CDT Failure Procedures

If the calibration drift exceeds the specification limits listed in Table 2-11 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the CEMS.

(2) Completion of a successful CDT.

2.5.1.1.6 CDT Data Validation

Data is considered invalid and out-of-control (OOC) beginning the time corresponding to the completion of the fifth (5), consecutive, daily CDT where the zero or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification as summarized in Table 2-11 for five (5), consecutive, daily periods, or the time corresponding to the completion of the last successful CDT ***preceding*** the daily CDT check that results in a CDT in excess of four times (i.e., 4x) the allowable limit.

The end of the OOC period is the time corresponding to the completion of the CDT following corrective action (if necessary) that results in successful CDT at both the zero (or low-level) and high-level measurement points. Certain circumstances – such as an empty calibration gas cylinder or stuck calibration valve – which result in a calibration failure do not result in OOC data if a successful calibration is completed following corrective actions.

2.5.2 Quarterly

The following QA activities are completed at least in three (3) of four (4) calendar quarters, but in no more than three quarters in succession, on the pollutant gas concentration monitoring systems. The quarterly QA activities performed on the pollutant gas concentration monitoring systems include a cylinder gas audit (CGA).

2.5.2.1 Cylinder Gas Audit (CGA)

A cylinder gas audit (CGA) is completed on the pollutant gas concentration monitoring systems in three (3) of four (4) calendar quarters, but in no more than three (3) quarters in succession. A CGA is not required during the quarter in which the relative accuracy test audit (RATA) is completed. Successive CGAs will not occur closer than 2 months.

The CGA is conducted consistent with the procedures in Procedure 1 of 40 CFR 60 Appendix F at § 5.1.2. A CGA is conducted while the monitoring systems are not operating out-of-control (OOC) with respect to any required quality assurance assessments. A CGA may be done "cold" with no corrective maintenance, repair, calibration adjustments, re-linearization, or reprogramming of the monitor prior to the test. The CGA may be done after repair, corrective maintenance or reprogramming

of the monitor. No adjustments will be made to the monitoring system during the CGA.

Documentation of the results of the CGAs is located the Environmental Files.

The steps for conducting a CGA are as follows:

(1) The monitors are challenged with audit gases of known concentrations at two (2) points within the concentration ranges shown in Table 2-12. Audit gases are injected at the same point that the calibration gases are administered. This includes as much of the sampling system as possible (sample lines, filters, scrubbers, components exposed to the sample gas, and as much of the probe as practicable).

(2) The monitors are challenged three (3) times at each audit point. The sample line is purged in between each run at each audit point. The average of the three (3) responses for each audit point is used in determining accuracy. The monitor is challenged at each audit point for a sufficient period of time to assure that any sample gas in the lines is flushed out and the calibration gas flow has stabilized. The injection time also take into account the response time of the analyzers and sample system. The difference between the actual concentration of the audit gas and the concentration indicated by the monitor determines the accuracy of the monitor.

2.5.2.1.1 CGA Reference Gas Concentrations

Two (2) reference gas concentrations are utilized for the CGA. The two (2) reference gas concentrations are determined based on the applicable span value as defined in Section 2.5.1.1.1 or the reference gas concentrations defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2. The reference gas concentrations are presented in Table 2-12. The audit gases are U.S. EPA Protocol grade

calibration gases and are different then the audit gases used in the CDT.

Table 2-12
CGA Reference Gas Summary
Quinnesec Mill

Emission Unit	Analyzer	Audit Point 1 [a]	Audit Point 2 [b]
Recovery Furnace	NO_X	100.0 – 150.0 ppm	250.0 – 300.0 ppm
Waste Fuel Boiler	NO_X	200.0 – 300.0 ppm	500.0 – 600.0 ppm
Package Boiler	NO_X	100.0 – 150.0 ppm	250.0 – 300.0 ppm
Recovery Furnace	SO2	200.0 – 300.0 ppm	500.0 – 600.0 ppm
Waste Fuel Boiler	SO2	300.0 – 450.0 ppm	750.0 – 900.0 ppm
Recovery Furnace	CO	400.0 – 600.0 ppm	1000.0 – 1200.0 ppm
Package Boiler	CO	60.0 – 90.0 ppm	150.0 – 180.0 ppm
Recovery Furnace and Lime Kiln	TRS	6.0 – 9.0 ppm	15.0 – 18.0 ppm

[a] The audit point 1 reference gas is defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2 as between 20 and 30% of the span value.
[b] Upscale level reference gas is defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2 as between 50 and 60% of the span value.

2.5.2.1.2 CGA Accuracy Calculation

The CGA accuracy for the pollutant gas concentration monitoring systems is calculated for each reference gas level as described in Equation 2-2.

Equation 2-2 $$A = \frac{(C_M - C_A)}{C_A} \times 100$$

Where:

A = Percent accuracy of the CEMS.

CM = Average CEMS response during audit in units of applicable standard or appropriate concentration.

CA = Average audit value in units of applicable standard or appropriate concentration.

2.5.2.1.3 CGA Pass/Fail Tolerance

The pollutant gas concentration monitoring system is out-of-control (OOC) and the measured data is invalid when the CGA exceeds the tolerances in Table 2-13 at any audit point. The CEMS is deemed OOC the hour in which the CGA was completed or aborted in anticipation of a CGA failure. The measured data from the pollutant gas concentration monitoring system is considered valid the hour that a successful CGA is completed.

Table 2-13
CGA Accuracy Pass/Fail Tolerance
Quinnesec Mill

Analyzer	Out-of-Control Limit [a] (Data Invalid)
NO_X, SO_2, CO, TRS	± 15.0% of Average Audit Value [b]

[a] Data is considered invalid or out-of-control (OOC) and adjustments must be made to the monitoring system if the CGA accuracy tolerance is more than the listed tolerance.
[b] As determined by Equation 2-2 in Section 2.5.2.1.2.

2.5.2.1.4 CGA Failure Procedures

If the calibration accuracy exceeds the specification limits listed in Table 2-13 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the CEMS.

(2) Completion of a successful CDT as described in Section 2.5.1.1.

(3) Completion of a successful CGA.

2.5.2.1.5 CGA Data Validation

The monitoring system is out-of-control (OOC) and the measured data is invalid when the CGA exceeds the tolerance in Table 2-13 at any audit point. The CEMS is deemed OOC the hour in which the CGA was completed or aborted in anticipation of a CGA failure. The measured data is considered valid the hour that a successful CGA is completed.

2.5.3 Annually

The following QA activities are completed at least once annually (i.e., every four (4) calendar quarters) on the CEMS and include a relative accuracy test audit (RATA).

2.5.3.1 Relative Accuracy Test Audit (RATA)

RATAs consist of a minimum of nine (9) comparative runs between the Mill CEMS and the U.S. EPA RM. If more than nine (9) are conducted, a maximum of three (3) may be excluded but nine (9) runs will be utilized to calculate the relative accuracy. Relative accuracy is calculated for pollutant emission in terms of the applicable compliance units of measure, i.e., ppmvd O_2 corrected, lbs /MMBtu, or lbs/hour, using the associated ancillary equipment as specified in Table 2-1. Once a RATA has started, no adjustments to the monitoring system will be made other than routine calibration adjustments following the daily CDT.

RATAs are conducted once every four (4) calendar quarters to assess the accuracy of the CEMS relative to the appropriate U.S. EPA Reference Methods (RM). RATAs

are conducted in accordance with the procedures contained in the applicable PS and RM summarized in Table 2-7 and Table 2-14 respectively.

Table 2-14
RATA Reference Method Summary
Quinnesec Mill

Analyzer	U.S. EPA Reference Method	Reference
NO_X	7E	40 CFR 60 Appendix A
SO2	6C	40 CFR 60 Appendix A
CO	10	40 CFR 60 Appendix A
TRS	16A or 16C	40 CFR 60 Appendix A

2.5.3.1.1 RATA Unit Operating Conditions

RATAs are conducted while the sources listed in Table 2-2 are operated greater than 50% of normal load pursuant to 40 CFR Part 60 Appendix B PS-2 §8.4.1.

2.5.3.1.2 RATA Calculation

RATA results are calculated by the contracted emission test firm in accordance with the calculations in 40 CFR 60 Appendix B PS-2 §12.

2.5.3.1.3 RATA Pass/Fail Tolerance

A RATA is "failed" if the results do not meet the acceptable criteria listed in Table 2-15. If a RATA is aborted in anticipation of unacceptable results, the RATA is considered to have failed.

Table 2-15
RATA Pass/Fail Tolerance
Quinnesec Mill

Parameter	Units	Acceptable Performance Criteria		
		Average Reference Method	Applicable Emission Standard	Average Difference + 2.5% CC
NO_X, SO_2	lbs/MMBtu, lbs/hour, ppmvd O_2 corrected	20%	10%	
CO	lbs/MMBtu, lbs/hour, ppmvd @ 8% O2	10%	5%	5 ppm
TRS	ppm @ 8% O_2 (Recovery Furnace) ppm @ 10% O_2 (Lime Kiln)	20%	10%	

2.5.3.1.4 RATA Failure Procedures

If the RATA exceeds the tolerances listed in Table 2-15 the following procedures are recommended but not limited to:

(1) Initiation of corrective maintenance procedures to repair the CEMS.

(2) Completion of a successful CDT as described in Section 2.5.1.1.

(3) Completion of a successful RATA.

2.5.3.1.5 RATA Data Validation

Data collected the hour after the completion of the RATA that exceeds the tolerances in Table 2-15 is considered to be out-of-control (OOC). The beginning of the OOC period is the hour after the completion of the unsuccessful RATA. The end of the OOC period is the hour after the completion of a successful RATA.

The OOC period described above is consistent with the OOC periods defined

in 40 CFR 60 Appendix F §5.2.1.

3 OXYGEN (O_2)

The oxygen (O_2) concentration monitoring system is an ancillary monitoring system to the continuous emission monitoring systems (CEMS) and continuous emission rate monitoring systems (CERMS) listed in Table 3-1. This section of the QAP addresses the quality assurance requirements for the O_2 concentration monitoring system. Information regarding the monitoring systems that depend on O_2 concentration to express emissions in terms of an applicable emission standard can be found elsewhere in this QAP as noted in Table 3-1.

Table 3-1
O_2 Concentration Monitoring System Dependents
Quinnesec Mill

Monitoring System	Units	Component	QAP Reference
Waste Fuel Boiler and Package Boiler NO_X Emission Rate	lbs NO_X/MMBtu	NO_X	Section 2
		O_2	Section 3
Waste Fuel Boiler SO2 Emission Rate	lbs SO_2/MMBtu	SO_2	Section 2
		O_2	Section 3
Waste Fuel Boiler CO2 Emission Rate	CO_2 %	CO2	Section 4
		O2	Section 3
Package Boiler CO Emission Rate	lbs CO/MMBtu	CO	Section 2
		O_2	Section 3
Recovery Furnace O_2 Corrected Pollutant Concentration	ppmvd TRS @ 8% O_2	TRS	Section 2
		O_2	Section 3
	ppmvd SO_2 @ 8% O_2	SO_2	Section 2
		O_2	Section 3
	ppmvd CO @ 8% O_2	CO	Section 2
		O_2	Section 3
	ppmvd NOx @ 8% O_2	NOx	Section 2
		O_2	Section 3
Lime Kiln O_2 Corrected Pollutant Concentration	ppmvd TRS @ 10% O_2	TRS	Section 2
		O_2	Section 3

3.1 AFFECTED SOURCES

O_2 concentration monitoring system are installed, operated, and maintained on the sources listed in Table 3-2.

Table 3-2
O_2 Concentration Monitoring System Summary
Quinnesec Mill

Emission Unit ID	Emission Unit Description
EU0815	Recovery Furnace
EU0917	Lime Kiln
EU1121	Waste Fuel Boiler
EU1122	Package Boiler

3.2 EMISSION LIMITATIONS

The O_2 concentration monitoring system is utilized as part of the CEMS and CERMS listed in Table 3-1. There are no direct O_2 concentration emission limitations.

3.3 MONITORING REQUIREMENTS

O_2 concentration monitoring system is required pursuant to the applicable monitoring regulations summarized in Table 3-3.

Table 3-3
O_2 Applicable Monitoring Requirements
Quinnesec Mill

Emission Unit	Applicable Monitoring Regulation	Quality Assurance Activity Basis
Recovery Furnace	40 CFR 60 Subpart BB, 40 CFR 52.21	40 CFR §60.13(d)(1) 40 CFR 60 Appendix F, P1
Lime Kiln	40 CFR 60 Subpart BB, 40 CFR 52.21	
Waste Fuel Boiler	40 CFR 60 Subpart D, 40 CFR 52.21, 40 CFR 98	
Package Boiler	40 CFR 60 Subpart Db, 40 CFR 52.21	

3.3.1 Monitoring System Description

The O_2 concentration monitoring system major components are described below and summarized in Table 3-4.

3.3.1.1 Sampling and Conditioning System

Stack gas is delivered to the O_2 analyzer via an extractive sampling and conditioning system. The heated sample probe is installed at a specific location in the stack to collect the most representative stack gas samples. The probe, filter, and sample line are heated to prevent water condensation in the sampling system. The moisture in the stack gas is removed prior to the sample pump and analyzer using a condenser type moisture removal system. The condensers cool the gas below the dew point (using refrigerated coils), and then remove the condensed liquid water from the gas stream. Water removal is performed automatically to prevent filling the condensate trap and flooding the sampling line. The conditioned stack gas is passed through a particulate filter and a diaphragm sample pump prior to being delivered to the analyzer rack. The sampling system is designed in a manner not to pressurize the analyzer during normal sampling or routine calibrations.

3.3.1.2 O_2 Analyzer

Oxygen (O_2) concentration in the stack gas is measured using a paramagnetic O_2 analyzer. A paramagnetic analyzer quantifies O_2 based on the magnetic properties of O_2. Molecules that are attracted by a magnetic field are described as paramagnetic, while those repelled are called diamagnetic. Most molecules are diamagnetic. Oxygen, however, is paramagnetic and is strongly attracted to magnetic fields as compared to most other gases. The attraction of O_2 to a magnetic field is directly proportional to the O_2 concentration in the stack gas.

Table 3-4
O_2 Concentration Monitoring System Major Component Summary
Quinnesec Mill

Analyzer/Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Recovery Furnace									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180240002						Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
O_2	City	Citicel 2FO		25	0 – 25	%		dry	Span defined in §60.284(a)(2)(ii).
DAHS	VIM	CEMLink6							
Lime Kiln									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180570001						Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
O_2	City	Citicel 2FO		25	0 – 25	%		dry	Span defined in §60.284(a)(2)(ii).
DAHS	VIM	CEMLink6							
Waste Fuel Boiler									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180530001						Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
O_2	City	Citicel 2FO		25	0 – 25	%		dry	Span not defined.
DAHS	VIM	CEMLink6							
Package Boiler									
Dilution Probe & Umbilical	Thermo Scientific	PRO902C-1E							Removes moisture from stack gas prior to analysis and performs electrochemical oxygen measurement. Transports diluted stack gas to analyzer.
Probe Controller	Thermo Scientific	CTL902C	1180390002						Monitors and controls probe temperature, displays O2 output, connects probe alarm output.
O_2	City	Citicel 2FO		25	0 – 25	%		dry	Span not defined.
DAHS	VIM	CEMLink6							

3.4 INSTALLATION AND INITIAL CERTIFICATION

The installation and initial certification of each O_2 concentration monitoring system was completed in accordance with the applicable Performance Specification (PS) in 40 CFR 60 Appendix B. Documentation of the certifications is located in the Environmental Files. Initial certification of the O_2 concentration monitoring system will only be required upon the installation of a new O_2 concentration monitoring system. The applicable PS is summarized in Table 3-5.

Table 3-5
Applicable Performance Specification
Quinnesec Mill

Monitoring System	Applicable Performance Specification (PS)	Reference
O_2	PS3	40 CFR 60 Appendix B

3.5 ONGOING QUALITY ASSURANCE ACTIVITIES

The quality of the data collected by the O_2 concentration monitoring system is assessed by the completion of ongoing quality assurance (QA) procedures. The QA procedures for the O_2 concentration monitoring system are summarized in Table 3-6.

Table 3-6
O_2 Ongoing Quality Assurance Frequency
Quinnesec Mill

Analyzer	Daily	Weekly	Monthly	Quarterly	Semi-annually	Annual
O_2	CDT [a] Section 3.5.1.1			CGA [b] Section 3.5.2.1		RATA [c] Section 3.5.3.1

[a] Calibration Drift Test (CDT)
[b] Cylinder Gas Audit (CGA)
[c] Relative Accuracy Test Audit (RATA)

3.5.1 Daily

The following QA activities are completed at least once daily (i.e., every 24 hours) on the O_2 concentration monitoring systems. The daily QA activities performed on the O_2 concentration monitoring systems include a calibration drift test (CDT).

3.5.1.1 Calibration Drift Test (CDT)

A calibration drift test (CDT) is completed by the Mill pursuant to 40 CFR §60.13(d)(1) at least once every 24 hours in accordance with the procedures described herein. A CDT is automatically initiated every 24 hours by the Programmable Logic Controller (PLC). The PLC energizes normally closed solenoid valves to allow the reference gas to be introduced to the sample probe. The reference gas is transported to the sample probe and then travels to the analyzer through the stack sample lines. This includes all of the sample line filters, conditioners, and other sampling system components. The solenoid valve is energized introducing the reference gas for a pre-determined time interval adequate for the monitoring system to measure and record a stable response. A zero and span gas check are run at least every 24-hours. Additional CDT, if required, may be initiated by the Mill manually throughout the 24 hour period.

3.5.1.1.1 Span Value

Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the concentration specified for the affected source category in an applicable subpart of the regulations that is used to set the calibration gas concentration and in determining calibration drift. The applicable subparts for the O_2 concentration monitoring system are listed in Table 3-3. The span values for the O_2 concentration monitoring systems are summarized in Table 3-7.

Table 3-7
O_2 Span Summary
Quinnesec Mill

Analyzer	Span [a]	Reference
O_2	25 %	40 CFR §60.284 (a)(2)(ii) – Recovery Furnace & Lime Kiln [Not defined for Waste Fuel or Package Boilers] [b]

[a] Span is defined in 40 CFR 60 Appendix F §2.3 as the upper limit of a gas concentration measurement range that is specified for affected source categories in the applicable subpart of the regulation. Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the concentration specified for the affected source category in an applicable subpart of the regulations that is used to set the calibration gas concentration and in determining calibration drift.

[b] The span for the O_2 concentration monitoring system installed on Waste Fuel and Package Boilers is not defined in the applicable subpart listed in Section 3.3. The Quinnesec Mill has elected to use a span of 25% for the O_2 concentration monitoring system installed on these emissions units.

3.5.1.1.2 CDT Reference Gas Concentrations

Two (2) reference material concentrations are utilized for the CDT. The two (2) concentrations are determined based on the applicable span value as defined in Section 3.5.1.1.1. The reference concentrations are zero or low (e.g., between 0 and 20% of span value) and upscale (e.g., 50 to 100% of span value). The low reference material is a U.S. EPA Protocol grade calibration gas. The upscale reference material is clean, dry ambient air. The reference material concentrations that are used in the CDT are summarized in Table 3-8.

Table 3-8
O_2 CDT Reference Material Summary
Quinnesec Mill

Analyzer	Zero or Low [a],[c]	Upscale [b],[c]
O_2	0 – 5.0 %	12.5 – 25.0 %

[a] Zero or low level reference gas is defined in 40 CFR §60.13(d)(1) as between 0 and 20% of the span value.
[b] Upscale level reference material is defined in 40 CFR §60.13(d)(1) as between 50 and 100% of the span value. EPA FAQ document to method 3A allows for use of purified ambient air for high-level calibrations.
[c] 40 CFR §60.13(d)(1) is included by reference in applicable subpart listed in Section 3.3.

3.5.1.1.3 CDT Calculation

The calibration drift for the O_2 analyzers are computed by the DAHS for each reference gas level as described in Equation 3-1.

Equation 3-1 $$CD = |R - A|$$

Where:

CD = Calibration Drift
R = Reference value of zero or upscale concentration introduced into the monitoring system.
A = Actual monitoring system response to the reference value (R).

3.5.1.1.4 CDT Pass/Fail Tolerance

Pursuant to 40 CFR §60.13(d)(1), the O_2 monitors are adjusted whenever the zero CDT or the upscale CDT exceeds two (2) times the limit of the applicable performance specification listed in Section 3.4 and summarized listed in Table 3-9. If the zero CDT or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification drift limit, as specified Table 3-9 for five (5), consecutive, daily periods, the CEMS is out-of-control (OOC). If either the zero (or low-level) or upscale-level CD result exceeds four times (i.e., 4x) the calibration drift limit of the applicable performance specification listed in Section 3.4, the CEMS is OOC.

If the calibration drift exceeds the specification limits listed in Table 3-9 for the appropriate monitor, the failure is indicated on the calibration report generated by the DAHS.

Table 3-9
O_2 CDT Pass/Fail Tolerance
Quinnesec Mill

Emission Unit	Analyzer	Adjustment Limit [a] (Data Valid)	Out-of-Control Limit [a] (Data Invalid)
Recovery Furnace, Lime Kiln, Waste Fuel Boiler, Package Boiler	O_2	± 1.0 % O_2	± 1.0 % O_2 for five (5) consecutive days OR ± 2.0% O_2 at any time

[a] Adjustments must be made to the monitoring system if the zero or upscale drift exceeds the drift tolerance by more than the listed value. Data is considered invalid and the CEMS is out-of-control (OOC) if the zero CDT or the upscale CDT exceeds twice the calibration drift limit specified in the applicable 40 CFR 60 Appendix B performance specification, as specified in Table 3-5 for five (5) consecutive, daily periods. If either the zero (or low-level) or upscale-level CD result exceeds four times the applicable performance specification calibration drift limit, the CEMS is also OOC.

3.5.1.1.5 CDT Failure Procedures

If the CDT exceeds the specification limits listed in Table 3-9 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the monitoring system.
(2) Completion of a successful CDT.

3.5.1.1.6 CDT Data Validation

Data is considered invalid and out-of-control (OOC) beginning the time corresponding to the completion of the fifth (5), consecutive, daily CDT where the zero or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification as summarized in Table 3-9 for five (5), consecutive, daily periods, or the time corresponding to the completion of the last successful CDT ***preceding*** the daily CDT check that results in a CDT in excess of four times (i.e., 4x) the allowable limit. Certain circumstances – such as an empty calibration gas cylinder or stuck calibration valve – which result in a calibration failure do not result in OOC data if a successful calibration is completed following corrective actions.

The end of the OOC period is the time corresponding to the completion of the CDT following corrective action (if necessary) that results in successful CDT at both the zero (or low-level) and high-level measurement points.

3.5.2 Quarterly

The following QA activities are completed at least once in each of the four (4) calendar quarters on the O_2 concentration monitoring systems. The quarterly QA activities performed on the O_2 concentration monitoring systems include a cylinder gas audit (CGA).

3.5.2.1 Cylinder Gas Audit (CGA)

A cylinder gas audit (CGA) is completed on the O_2 concentration monitoring system in three (3) of four (4) calendar quarters, but in no more than three (3) quarters in succession on the Lime Kiln, Recovery Furnace, Waste Fuel Boiler and Package Boiler. A CGA is not required during the quarter in which the relative accuracy test audit (RATA) is completed. Successive quarterly audits shall occur no closer than 2 months.

Documentation of the certification is located in the Environmental Files. The CGA is conducted consistent with the procedures in 40 CFR 60 Appendix F, Procedure 1 §5.1.2.

A CGA is conducted while the monitoring systems are not operating out-of-control (OOC) with respect to any required quality assurance assessments. A CGA may be done "cold" with no corrective maintenance, repair, calibration adjustments, re-linearization, or reprogramming of the monitor prior to the test. The CGA may be done after repair, corrective maintenance or reprogramming of the monitor. Once a CGA has started, no adjustments to the monitoring system will be made.

The steps for conducting a CGA are as follows:

(1) The O_2 concentration monitoring system is challenged with audit gases of known concentrations at two (2) points within the concentration ranges shown in Table 3-10. Audit gases are injected at the same point that the calibration gases are administered. This includes as much of the sampling system as possible (sample lines, filters, scrubbers, components exposed to the sample gas, and as much of the probe as practicable).

(2) The O_2 concentration monitoring system is challenged three (3) times at each audit point. The sample line is purged in between each run at each audit point. The average of the three (3) responses for each audit point is used in determining accuracy. The monitor is challenged at each audit point for a sufficient period of time to assure that any sample gas in the lines is flushed out and the calibration gas flow has stabilized. The injection time also takes into account the response time of the analyzers and the sample system. The difference between the actual concentration of the audit gas and the concentration indicated by the monitor determines the accuracy of the monitor.

3.5.2.1.1 CGA Reference Gas Concentrations

Two (2) reference gas concentrations are utilized for the CGA. The two (2) reference gas concentrations are determined based on the applicable span value as defined in Section 3.5.1.1.1 or the reference gas concentrations defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2. The reference gas concentrations for O_2 are presented in Table 3-10. The audit gases are U.S. EPA Protocol grade calibration gases and are different then the audit gases used in the CDT.

Table 3-10
O_2 CGA Reference Gas Summary
Quinnesec Mill

Analyzer	Audit Point 1 [a]	Audit Point 2 [b]
O_2	4.0 – 6.0 %	8.0 – 12.0 %

[a] The audit point 1 reference gas is defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2 as between 4.0 and 6.0% for O_2.
[b] Upscale level reference gas is defined in 40 CFR 60 Appendix F Procedure 1 § 5.1.2 as between 8.0 and 12.0% for O_2.

3.5.2.1.2 CGA Accuracy Calculation

The CGA accuracy for the O_2 concentration monitoring system is calculated for each reference gas level as described in Equation 3-2.

Equation 3-2 $$A = \frac{(C_M - C_A)}{C_A} x\ 100$$

Where:

A = Percent accuracy of the CEMS.
CM = Average CEMS response during audit in units of applicable standard or appropriate concentration.
CA = Average audit value in units of applicable standard or appropriate concentration.

3.5.2.1.3 CGA Pass/Fail Tolerance

The O_2 concentration monitoring system is out-of-control (OOC) and the measured data is invalid when the CGA exceeds the tolerances in Table 3-11 at any audit point. The CEMS is deemed OOC the hour in which the CGA was completed or aborted in anticipation of a CGA failure. The measured data from O_2 concentration monitoring system is considered valid the hour that a successful CGA is completed.

Table 3-11
O_2 CGA Accuracy Pass/Fail Tolerance
Quinnesec Mill

Analyzer	Out-of-Control Limit [a] (Data Invalid)
O_2	± 15.0% of Average Audit Value [b]

[a] Data is considered invalid or out-of-control (OOC) and adjustments must be made to the monitoring system if the CGA accuracy tolerance is more than the listed tolerance.
[b] As determined by Equation 3-2 in Section 3.5.2.1.2.

3.5.2.1.4 CGA Failure Procedures

If the calibration drift exceeds the specification limits listed in Table 3-11 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the monitoring system.

(2) Completion of a successful CDT as described in Section 3.5.1.1.

(3) Completion of a successful CGA.

3.5.2.1.5 CGA Data Validation

The O_2 concentration monitoring system is out-of-control (OOC) and the measured data is invalid when the CGA exceeds the tolerances in Table 3-11 at any audit point. The CEMS is deemed OOC the hour in which the CGA was completed or aborted in anticipation of a CGA failure. The measured data from O_2 concentration monitoring system is considered valid the hour that a successful CGA is completed.

3.5.3 Annually

The following QA activities are completed at least once annually (i.e., every four (4) calendar quarters) on the O2 CEMS. Note that RATAs for the NO_X, SO2, CO2, and CO CERMS (i.e., lbs pollutant/MMBtu and lbs pollutant/hour) and TRS, NOx, SO2 and CO ppm O_2 corrected measurement systems are dependent on the O_2 concentration monitoring systems.

3.5.3.1 Relative Accuracy Test Audit (RATA)

RATAs consist of a minimum of nine (9) comparative runs between the Mill CEMS and the U.S. EPA RM. If more than nine (9) are conducted, a maximum of three (3) may be excluded but nine (9) runs will be utilized to calculate the relative accuracy. Relative accuracy is calculated for O_2 emissions in terms of % O_2, dry. Once a RATA has started, no adjustments to the monitoring system will be made other than routine calibration adjustments following the daily CDT.

RATAs are conducted once every four (4) calendar quarters to assess the accuracy of the CEMS relative to the appropriate U.S. EPA Reference Methods (RM). RATAs are conducted in accordance with the procedures contained in the applicable PS and RM summarized in Table 3-5 and Table 3-12 respectively.

Table 3-12
O_2 RATA Reference Method Summary
Quinnesec Mill

Analyzer	U.S. EPA Reference Method	Reference
O_2	3A	40 CFR 60 Appendix A

3.5.3.1.1 RATA Unit Operating Conditions

RATAs are conducted while the sources listed in Table 3-2 are operated greater than 50% of normal load pursuant to 40 CFR Part 60 Appendix B PS-2 §8.4.1.

3.5.3.1.2 RATA Calculation

RATA results are calculated by the contracted emission test firm in accordance with the calculations in 40 CFR 60 Appendix B PS-2 §12.

3.5.3.1.3 RATA Pass/Fail Tolerance

A RATA is "failed" if the results do not meet the acceptable criteria listed in Table 3-13. If a RATA is aborted in anticipation of unacceptable results, the RATA is considered to have failed.

Table 3-13
O_2 RATA Pass/Fail Tolerance
Quinnesec Mill

Parameter	Units	Acceptable Performance Criteria
O_2	% (dry)	20% of the mean reference method or 1% O_2

3.5.3.1.4 RATA Failure Procedures

If the RATA exceeds the tolerances listed in Table 3-13 the following procedures are recommended but not limited to:

(1) Initiation of corrective maintenance procedures to repair the CEMS.

(2) Completion of a successful CDT as described in Section 3.5.1.1.

(3) Completion of a successful RATA.

3.5.3.1.5 RATA Data Validation

Data collected the hour after the completion of the RATA that exceeds the tolerances in Table 3-13 is considered to be out-of-control (OOC). The beginning of the OOC period is the hour after the completion of the unsuccessful RATA. The end of the OOC period is the hour after the completion of a successful RATA.

The OOC period described above is consistent with the OOC periods defined in 40 CFR 60 Appendix F §5.2.1.

4 CARBON DIOXIDE (CO_2)

Waste fuel Boiler CO_2 greenhouse gas emissions are monitored and reported per 40 CFR 98 using Tier 4 methodology according to 98.33(a)(4)(iv): A continuous emissions O_2 monitor and stack gas flow meter (CEMs) are used to calculate continuous CO_2 emissions. Equation F-14a from appendix F to 40 CFR 75 along with Equation C-6 of 40 CFR 98 are used to convert O_2 and stack flow readings to metric tons/hr CO_2 emissions. A site specific factor is used to correct for stack gas moisture.

$$CO_{2d} = 100 \frac{F_c}{F} \frac{20.9 - O_{2d}}{20.9} \quad \text{(Eq. F-14a)}$$

Where:

CO_{2d} = Hourly average CO_2 concentration during unit operation, percent by volume, dry basis.

F, F_C = F-factor or carbon-based F_c-factor (determined according to 3.3.6 of appendix F to 40 CFR Part 75).

20.9 = Percentage of O_2 in ambient air.

O_{2d} = Hourly average O_2 concentration during unit operation, percent by volume, dry basis.

$$CO_2 = 5.18 \times 10^{-7} * C_{CO2} * Q \quad \text{(Eq. C-6)}$$

Where:

CO_2 = CO2 mass emission rate (metric tons/hr).

C_{CO2} = Hourly average CO2 concentration (% CO2).

Q = Hourly average stack gas volumetric flow rate (scfh).

5.18 × 10−7 = Conversion factor (metric tons/scf/% CO2).

This section of the QAP addresses the quality assurance requirements for the CO_2 concentration monitoring system. Information regarding the ancillary monitoring systems used in the CO_2

CERMS can be found elsewhere in this QAP as noted in Table 4-1. Note that per the missing data provisions of 90 CFR 98.35(b)(1), any hour of missing CO_2 emissions data during boiler operation will be substituted with the last valid value. This includes periods of maintenance, calibrations, analyzer failure, and periods when the analyzer is considered out of control.

Table 4-1
CO_2 Continuous Emission Rate Monitoring System Components
Quinnesec Mill

Monitoring System	Units	Component(s)	QAP Reference
CO_2 Emission Rate	lbs CO_2/hr	O_2	Section 3
		Flow	Section 5

4.1 AFFECTED SOURCES

CO_2 CERMS are installed, operated, and maintained on the sources listed in Table 4-2.

Table 4-2
CO_2 Concentration Monitoring System Summary
Quinnesec Mill

Emission Unit ID	Emission Unit Description
EU1121	Waste Fuel Boiler

4.2 EMISSION LIMITATIONS

The CO_2 CERMS is used to quantify CO_2 emissions in terms of metric tons CO_2/hr for 40 CFR 98 greenhouse gas reporting. There are no direct CO_2 emission limitations.

4.3 MONITORING REQUIREMENTS

CO_2 CERMS is required pursuant to the applicable monitoring regulations summarized in Table 4-3.

Table 4-3
CO_2 Applicable Monitoring Requirements
Quinnesec Mill

Emission Unit	Applicable Monitoring Regulation	Quality Assurance Activity Basis
Waste Fuel Boiler	40 CFR 98	40 CFR 98.34(c), 40 CFR 60 Appendix F, P1

4.3.1 Monitoring System Description

The major components of the CO_2 CERMS are described below and summarized in Table 4-4.

4.3.1.1 CO_2 CERMS Equipment

See section 3.3.1.2 for a description of the O2 analyzer system and section 5.3.1.1.2 for a description of the flow meter.

Table 4-4
CO_2 CERMS Major Component Summary
Quinnesec Mill

Analyzer Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Waste Fuel Boiler									
O_2 Analyzer	City	Citicel 2FO		25	0-25	%		dry	Span not defined.
Temperature Transmitter	Rosemount	044RL2U1A2 NA	0480352	450	150-450	°F		NA	Span not defined
Annubar	Dieterich Standard	DSF-46	274787.01.1	1.484	0-1.484	inches H2O		wet	Span not defined
Flow Transmitter	Rosemount	3051CD1A03 A1AH2A6		147090	0-147090	SCFM		wet	Span not defined. Converted to dry basis by DAHS using approved moisture factor of 19%
DAHS	VIM	CEMLink6							

4.4 INSTALLATION AND INITIAL CERTIFICATION

The installation and initial certification of the CO_2 CERMS was completed in accordance with applicable Performance Specification (PS) in 40 CFR 60 Appendix B. Documentation of the certification is located in the Environmental Files. Initial certification of the CO_2 CERMS will only be required upon the installation of a new O_2 or stack gas flow monitoring system. The applicable PS is summarized in Table 4-5.

Table 4-5
Applicable Performance Specification
Quinnesec Mill

Monitoring System	Applicable Performance Specification (PS)	Reference
O_2	PS3	40 CFR 60 Appendix B
Flow	PS6	40 CFR 60 Appendix B

4.5 ONGOING QUALITY ASSURANCE ACTIVITIES

The quality of the data collected by the CO_2 CERMS is assessed by the completion of ongoing quality assurance (QA) procedures. The QA procedures for the CO_2 concentration monitoring system are summarized in Table 4-6.

Table 4-6
CO_2 Ongoing Quality Assurance Frequency
Quinnesec Mill

Analyzer	Daily	Weekly	Monthly	Quarterly	Semi-annually	Annual
CO_2	CDT [(a)] Section 3.5.1 for O2 and Section 5.5.1 for Flow			CGA [(b)] Section 3.5.2		RATA [(c)] Section 4.5.3 for % CO2 and Section 5.5.2 for flow

[(a)] Calibration Drift Test (CDT) on O2 analyzer and flow meter
[(b)] Cylinder Gas Audit (CGA) on O2 analyzer
[(c)] Relative Accuracy Test Audit (RATA) % CO2 dry

4.5.1 Daily

See sections 3.5.1 and 5.5.1 for the daily quality assurance activities performed on the O_2 and flow analyzers, respectively. Note that per 40 CFR 98.34(c)(5), substitute data is used for any source operating hour where quality assured data are not obtained.

4.5.2 Quarterly

See section 3.5.2 for the quarterly quality assurance activities performed on the O_2 analyzer. Note that per 40 CFR 98.34(c)(5), substitute data is used for any source operating hour where quality assured data are not obtained.

4.5.3 Annually

The following QA activities are completed at least once annually (i.e., every four (4) calendar quarters) on the CO_2 CERMS (i.e., % CO_2). The CO_2 CERMS is dependent on the O_2 concentration monitoring system and volumetric flow monitor to determine lbs CO_2/hr. The annual QA activities performed on the CO_2 CERMS include a relative accuracy test audit (RATA) on the O_2 monitor (as % CO_2) as described in section 4.5.3.1 and the volumetric flow monitor (see section 5.5.2).

4.5.3.1 Relative Accuracy Test Audit (RATA)

A RATA consist of a minimum of nine (9) comparative runs between the Mill CERMS and the U.S. EPA Reference Method (RM). If more than nine (9) are conducted, a maximum of three (3) may be excluded but nine (9) runs will be utilized to calculate the relative accuracy. Relative accuracy is calculated for CO_2 CERMS in terms of % CO_2. Once a RATA has started, no adjustments to the monitoring system will be made other than routine calibration adjustments following the daily CDT. RATAs are conducted in accordance with the procedures contained in the applicable PS and RM summarized in **Table 4-5** and **Table 4-7** respectively. See section 5.5.2 for a description of the volumetric flow RATA.

Table 4-7
CO_2 RATA Reference Method Summary
Quinnesec Mill

Analyzer	U.S. EPA Reference Method	Reference
CO_2	3A	40 CFR 60 Appendix A

4.5.3.1.1 RATA Unit Operating Conditions

RATAs are conducted while the source listed in Table 4-2 is operated greater than 50% of normal load pursuant to 40 CFR Part 60 Appendix B PS-2 §8.4.1.

4.5.3.1.2 RATA Calculation

RATA results are calculated by the contracted emission test firm in accordance with the calculations in 40 CFR 60 Appendix B PS-2 §12.

4.5.3.1.3 RATA Pass/Fail Tolerance

A RATA is "failed" if the results do not meet the acceptable criteria listed in Table 4-8. If a RATA is aborted in anticipation of unacceptable results, the RATA is considered to have failed.

Table 4-8
CO_2 RATA Reference Method Summary
Quinnesec Mill

Parameter	Units	Acceptable Performance Criteria
CO_2	%	20% of the mean reference method or 1% CO_2

4.5.3.1.4 RATA Failure Procedures

If the RATA exceeds the tolerances listed in Table 4-8 the following procedures are recommended but not limited to:

(1) Initiation of corrective maintenance procedures to repair the CEMS.

(2) Completion of a successful CDT as described in section 4.5.1.

(3) Completion of a successful RATA.

4.5.3.1.5 RATA Data Validation

Data collected the hour after the completion of the RATA that exceeds the tolerances in Table 4-8 is considered to be out-of-control (OOC). The beginning of the OOC period is the hour after the completion of the unsuccessful RATA. The end of the OOC period is the hour after the completion of a successful RATA.

The OOC period described above is consistent with the OOC periods defined in 40 CFR 60 Appendix F §5.2.1. Note that per 40 CFR 98.34(c)(5), substitute data is used for any source operating hour where quality assured data are not obtained.

5 VOLUMETRIC FLOWRATE (VFR)

The volumetric flowrate (VFR) monitoring systems are ancillary monitoring systems to the continuous emission rate monitoring systems and combined main stack opacity monitoring system listed in Table 5-1. This section of the QAP addresses the quality assurance requirements for the VFR monitoring systems. Information regarding the monitoring systems that depend on flow to express emissions in terms of an applicable emission standard can be found elsewhere in this QAP as noted in Table 5-1.

Table 5-1
VFR Monitoring System Dependents
Quinnesec Mill

Monitoring System	Units	Component(s)	QAP Reference
Waste Fuel Boiler CO_2 Emission Rate	lbs CO_2/hr	CO_2	Section 4
		VFR	Section 5
Waste Fuel Boiler NOx Emission Rate	lbs NOx/hr	NOx	Section 2
		VFR	Section 5
Waste Fuel Boiler SO_2 Emission Rate	lbs SO_2/hr	SO2	Section 2
		VFR	Section 5
Main Stack Combined Opacity	% Opacity	Opacity	Section 6
		VFR	Section 5

5.1 AFFECTED SOURCES

VFR monitoring systems are installed, operated, and maintained on the sources listed in Table 5-2.

Table 5-2
VFR Monitoring System Summary
Quinnesec Mill

Emission Unit ID	Emission Unit Description
EU0815	Recovery Furnace
EU1121	Waste Fuel Boiler

5.2 EMISSION LIMITATIONS

The VFR from the Recovery Furnace and Waste Fuel Boiler are used in the Opacity Combiner Equation to calculate main stack combined opacity. The Waste Fuel Boiler VFR monitoring system is also used to quantify gas emissions in terms of lbs/hr. There are no direct VFR emission limitations. See the applicable gas and opacity sections of the QAP as specified in Table 5-1 for the associated pollutant gas rate and opacity emissions limits.

5.3 MONITORING REQUIREMENTS

A VFR monitoring system is required pursuant to the applicable monitoring regulations summarized in Table 5-3.

Table 5-3
VFR Associated Applicable Monitoring Requirements
Quinnesec Mill

Emission Unit	Applicable Monitoring Regulation	Quality Assurance Activity Basis
Waste Fuel Boiler	40 CFR 98, 40 CFR 52.21, 40 CFR 60.42(a)(2)	40 CFR 60 Appendix F, P1 CD Assessment and Relative Accuracy (RATA)
Recovery Furnace	40 CFR 52.21, 40 CFR 64	

5.3.1 Monitoring System Description

The major components of the VFR monitoring system are described below and summarized in Table 5-4.

5.3.1.1 VFR Monitor

5.3.1.1.1 Recovery Furnace Flow Rate

Volumetric flowrate (VFR) of the Recovery Furnace stack gas is measured using an optical scintillation flow monitor. Scintillation is the variation of light caused by its passage through pockets of air with different temperature and density. The monitor consists of a transmitter which emits a light beam across the duct and a receiver which contains two photo detectors. The flow meter uses scintillation in air flow to determine velocity by measuring the time it takes for the light pattern "fingerprint" to travel from one photo detector to the other. This velocity is used along with duct area, temperature, static pressure, and an approved, fixed stack gas moisture factor to calculate the volumetric flow rate in terms of dry standard cubic feet per minute (DSCFM) per equation 2-8 of EPA Method 2, "*Determination of Stack Gas Velocity and Volumetric Flow Rate"*.

5.3.1.1.2 Waste Fuel Boiler Flow Rate

Volumetric flowrate (VFR) of the Waste Fuel Boiler stack gas is measured using a cross-duct annubar velocity head pressure sensor and a pressure transmitter. This velocity head pressure is used along with duct area, temperature, absolute stack pressure, and an approved, fixed stack gas moisture factor to calculate the stack gas velocity in feet per minute (ft/min) and the volumetric flow rate in terms of dry standard cubic feet per minute (DSCFM) per equations 2-7 and 2-8 of EPA Method 2, "*Determination of Stack Gas Velocity and Volumetric Flow Rate"*.

Table 5-4
VFR Major Component Summary
Quinnesec Mill

Monitor Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Recovery Furnace									
Flow Meter	OSI	OSF 2000	04040127	7872	0-7872	FPM		wet	Span not defined. Converted to basis by DAHS using approved moisture factor of 23%
Temperature	Rosemount	3144PD1A1E 5B4M5		500	100-500	°F			
Stack Pressure	Rosemount	3051S2CG1A 2F12A2AB1 D2E5L4		5	-15-5	inches H_2O			
DAHS	VIM	CEMLink6							
Waste Fuel Boiler									
Temperature Transmitter	Rosemount	044RL2U1A 2NA		450	150-450	°F			
Annubar	Dieterich Standard	DSF-46	274787.01.1	1.484	0-1.484	inches H_2O		wet	
Flow Transmitter	Rosemount	3051CD1A03 A1AH2A6		147090	0-147090	SCFM		wet	Span not defined. Converted to dry basis by DAHS using approved moisture factor of 19%
DAHS	VIM	CEMLink6							

5.4 INSTALLATION AND INITIAL CERTIFICATION

The installation and initial certification of the VFR monitoring systems was completed in accordance with applicable Performance Specification (PS) in 40 CFR 60 Appendix B. Documentation of the certification is located in the Environmental Files. Initial certification of the VFR monitoring systems will only be required upon the installation of a new VFR monitoring system. The applicable PS is summarized in Table 5-5.

Table 5-5
Applicable Performance Specification
Quinnesec Mill

Monitoring System	Applicable Performance Specification (PS)	Reference
VFR	PS6	40 CFR 60 Appendix B

5.5 ONGOING QUALITY ASSURANCE ACTIVITIES

The quality of the data collected by the VFR monitoring systems is assessed by the completion of ongoing quality assurance (QA) procedures. The QA procedures for the VFR monitoring systems are summarized in Table 5-6.

Table 5-6
VFR Ongoing Quality Assurance Frequency
Quinnesec Mill

Analyzer	Daily	Weekly	Monthly	Quarterly	Semi-annually	Annual
VFR	CDT [(a)] Section 5.5.1.1					RATA [(b)] Section 5.5.2.1

[(a)] Calibration Drift Test (CDT)
[(b)] Relative Accuracy Test Audit (RATA)

5.5.1 Daily

The following QA activities are completed at least once daily (i.e., every 24 hours) on the VFR monitoring systems. The daily QA activities performed on the VFR monitoring systems include a calibration drift test (CDT).

5.5.1.1 Calibration Drift Test (CDT)

A calibration drift test (CDT) is completed by the Mill pursuant to 40 CFR §60.13(d)(1) at least once every 24 hours in accordance with the procedures described herein. A CDT is automatically initiated every 24 hours by the Programmable Logic Controller (PLC). The PLC triggers the VFR analyzer to perform a check cycle. In the check cycle the analyzer measures against known signals to compare against the zero and span A zero and span check are run at least every 24-hours. Additional CDT, if required, may be initiated by the Mill manually throughout the 24 hour period.

5.5.1.1.1 Span Value

Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the reference value specified for the affected source category in an applicable subpart of the regulations that is used to set the reference value and in determining calibration drift. The applicable subparts for the VFR monitoring system are listed in Table 5-3. The span values for the VFR monitoring system are summarized in Table 5-7.

Table 5-7
VFR Span Summary
Quinnesec Mill

Analyzer	Span [a]	Reference
Recovery Furnace	7872 ft/min	[Not defined] [b]
Waste Fuel Boiler	1.48 inches H_2O	[Not defined] [b]

[a] Span is defined in 40 CFR 60 Appendix F §2.3 as the upper limit of the range that is specified for affected source categories in the applicable subpart of the regulation. Span is defined in 40 CFR 60 Appendix B Performance Specification 2 §3.11 as the value specified for the affected source category in an applicable subpart of the regulations that is used to set the calibration value and in determining calibration drift.

[b] The instrument span for the VFR monitoring systems is not defined in the applicable subpart listed in section 5.3. THE QUINNESEC MILL has elected to use the spans specified in Table 5-7 based upon anticipated maximum flow rates.

5.5.1.1.2 CDT Reference Values

Two (2) reference values are utilized for the CDT. The two (2) reference values are determined based on the applicable span value as defined in section 5.5.1.1.1. The reference values are zero or low (e.g., between 0 and 20% of span value) and upscale (e.g., 50 to 100% of span value). The reference values that are used in the CDT are summarized in Table 5-8.

Table 5-8
VFR CDT Reference Value Summary
Quinnesec Mill

Analyzer	Zero or Low [a],[c]	Upscale [b],[c]
Recovery Furnace VFR	787.2 ft/min	4723.2 ft/min
Waste Fuel Boiler VFR	0 inches H_2O	1.20 inches H_2O

[a] Zero or low level reference value is defined in 40 CFR §60.13(d)(1) as between 0 and 20% of the span value.
[b] Upscale level reference value is defined in 40 CFR §60.13(d)(1) as between 50 and 100% of the span value.
[c] 40 CFR §60.13(d)(1) is included by reference in applicable subpart listed in section 5.3.

5.5.1.1.3 CDT Calculation

The calibration drift for the VFR monitoring system are computed by the DAHS for each reference gas level as described in Equation 5-1.

Equation 5-1 $$CD = \frac{|R-A|}{SPAN}\ x\ 100$$

Where:

CD = Calibration Drift as a percentage of the SPAN.
R = Reference value of zero or upscale reference value introduced into the monitoring system.
A = Actual monitoring system response to the reference value (R).
SPAN = Highest concentration monitor component is required to be capable of measuring as defined in section 5.5.1.1.1.

5.5.1.1.4 CDT Pass/Fail Tolerance

Pursuant to 40 CFR §60.13(d)(1), the VFR monitors are adjusted whenever the zero CDT or the upscale CDT exceeds two (2) times the limit of the applicable performance specification listed in section 5.4 and summarized listed in Table 5-9. If the zero CDT or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification listed in listed in Table 5-9 for five (5), consecutive, daily periods, the CEMS is out-of-control (OOC). If either the zero (or low-level) or upscale-level CD result exceeds four times (i.e., 4x) the applicable drift specification in applicable performance specification listed in section 5.4, the VFR is OOC.

If the calibration drift exceeds the specification limits listed in Table 5-9 for the appropriate monitor, the failure is indicated on the calibration report generated by the DAHS.

Table 5-9
VFR CDT Pass/Fail Tolerance
Quinnesec Mill

Emission Unit	Analyzer	Adjustment Limit [a] (Data Valid)	Out-of-Control Limit [a] (Data Invalid)
Recovery Furnace	VFR	± 6.0 % of span OR ± 472.3 ft/min	± 6.0 % of span OR ± 472.3 ft/min for five (5) consecutive days OR ± 12.0 % of span OR ± 944.6 ft/min at any time
Waste Fuel Boiler	VFR	± 6.0 % of span OR ± 0.09 inches H_2O	± 6.0 % of span OR ± 0.09 inches H_2O for five (5) consecutive days OR ± 12.0 % of span OR ± 0.18 inches H_2O at any time

[a] Adjustments must be made to the monitoring system if the zero or upscale drift exceeds the drift tolerance by more than the listed value. Data is considered invalid and the VFR is out-of-control (OOC) if the zero CDT or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification for five (5), consecutive, daily periods. If either the zero (or low-level) or upscale-level CD result exceeds four times (i.e., 4x) the applicable drift specification in applicable performance specification, the monitoring system is also OOC.

5.5.1.1.5 CDT Failure Procedures

If the CDT exceeds the specification limits listed in Table 5-9 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the monitoring system.
(2) Completion of a successful CDT.

5.5.1.1.6 CDT Data Validation

Data is considered invalid and out-of-control (OOC) beginning the time

corresponding to the completion of the fifth (5), consecutive, daily CDT where the zero or the upscale CDT exceeds twice (i.e., 2x) the applicable performance specification as summarized in Table 5-9 for five (5), consecutive, daily periods, or the time corresponding to the completion of the last successful CDT ***preceding*** the daily CDT check that results in a CDT in excess of four times (i.e., 4x) the allowable limit.

The end of the OOC period is the time corresponding to the completion of the CDT following corrective action (if necessary) that results in successful CDT at both the zero (or low-level) and high-level measurement points.

5.5.2 Annually

The following QA activities are completed at least once annually (i.e., every four (4) calendar quarters) on the CO_2 CERMS (i.e., lbs CO_2/hr). The CO_2 CERMS is dependent on the CO_2 concentration monitoring system and volumetric flow monitor (VFR) to determine lbs CO_2/hr. The annual QA activities performed on the CO_2 CERMS includes a relative accuracy test audit (RATA).

5.5.2.1 Relative Accuracy Test Audit (RATA)

A RATA consist of a minimum of nine (9) comparative runs between the Mill CERMS and the U.S. EPA Reference Method (RM). If more than nine (9) are conducted, a maximum of three (3) may be excluded but nine (9) runs will be utilized to calculate the relative accuracy. Relative accuracy is calculated for VFR terms of dry standard cubic feet/minute (DSCFM). Once a RATA has started, no adjustments to the monitoring system will be made other than routine calibration adjustments following the daily CDT. RATAs are conducted in accordance with the procedures contained in the applicable PS and RM summarized in Table 5-5 and Table 5-7 respectively.

Table 5-10
VFR RATA Reference Method Summary
Quinnesec Mill

Analyzer	U.S. EPA Reference Method	Reference
VFR	2	40 CFR 60 Appendix A

5.5.2.1.1 RATA Unit Operating Conditions

RATAs are conducted while the sources listed in Table 5-2 are operated greater than 50% of normal load pursuant to 40 CFR Part 60 Appendix B PS-2 §8.4.1.

5.5.2.1.2 RATA Calculation

RATA results are calculated by the contracted emission test firm in accordance with the calculations in 40 CFR 60 Appendix B PS-2 §12.

5.5.2.1.3 RATA Pass/Fail Tolerance

A RATA is "failed" if the results do not meet the acceptable criteria listed in Table 5-8. If a RATA is aborted in anticipation of unacceptable results, the RATA is considered to have failed.

Table 5-8
VFR RATA Reference Method Summary
Quinnesec Mill

Parameter	Units	Acceptable Performance Criteria
VFR	DSCFM	20% of the mean reference method

5.5.2.1.4 RATA Failure Procedures

If the RATA exceeds the tolerance listed in Table 5-8 the following procedures are recommended but not limited to:

(1) Initiation of corrective maintenance procedures to repair the flow meter.

(2) Completion of a successful CDT as described in 5.5.1.1.

(3) Completion of a successful RATA.

5.5.2.1.5 RATA Data Validation

Data collected the hour after the completion of the RATA that exceeds the tolerance in Table 5-8 is considered to be out-of-control (OOC). The beginning of the OOC period is the hour after the completion of the unsuccessful RATA. The end of the OOC period is the hour after the completion of a successful RATA.

The OOC period described above is consistent with the OOC periods defined in 40 CFR 60 Appendix F §5.2.1.

6 CONTINUOUS OPACITY MONITORING SYSTEM (COMS)

A continuous opacity monitoring system (COMS) consists of opacity monitor and a data acquisition and handling system (DAHS). These components are necessary to determine the percent opacity in an exhaust stack. In addition, flow values from the emission units specified in Table 6-1 are used along with opacity readings to calculate the combined opacity of these units at

the exit of the combined, main stack (see Table 7-1 for calculation). Flow meter quality assurance activities for the Recovery Furnace and Waste Fuel Boiler flow meters are described in Section 5. A fixed Package Boiler flow of 30,000 DSCFM has been approved for use in the combined opacity calculation.

6.1 AFFECTED SOURCES

COMS are installed, operated, and maintained on the sources listed in Table 6-1.

Table 6-1
COMS Summary
Quinnesec Mill

Emission Unit ID	Emission Unit Description
EU0815	Recovery Furnace
EU1121	Waste Fuel Boiler
EU1122	Package Boiler

6.2 EMISSION LIMITATIONS

COMS are operated to demonstrate compliance with the emission limitations summarized in Table 6-2.

Table 6-2
COMS Emission Limitation Summary
Quinnesec Mill

Emission Unit	Emission Limitation	Units	Averaging Period	Comments
Recovery Furnace	20	%	10-consecutive, 6-min block averages	Corrective action trigger. (40 CFR 63 subpart MM)
	35	%	6-min block average	Excess emissions defined as > 35% opacity. Violation under 40 CFR 63 Subpart MM only if > 35% opacity for > 2% of the semi-annual operating time and violation under 40 CFR 60 Subpart BB only if > 35% opacity for > 6% of the quarterly operating time.
Waste Fuel Boiler	10	%	Daily block average	40 CFR 63 Subpart DDDDD
Recovery Furnace, Waste Fuel Boiler, Package Boiler – Combined Main Stack	20	%	6-min block average	>20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity R336.1301(1)(a), 40 CFR 60.42(a)(2)

6.3 MONITORING REQUIREMENTS

COMS are required pursuant to the applicable monitoring regulations summarized in Table 6-3.

Table 6-3
Applicable Monitoring Requirements
Quinnesec Mill

Emission Unit/Source	Applicable Monitoring Regulation	Quality Assurance Activity Basis
Recovery Furnace	40 CFR 60 Subpart BB 40 CFR 63 Subpart MM 40 CFR 64 R 336.1301(1)[(a)]	40 CFR 60, Appendix F, P3 40 CFR §60.13(d)(1) 40 CFR §63.8(c)(6)
Waste Fuel Boiler	40 CFR 60 Subpart D[(a)] R 336.1301(1)[(a)] 40 CFR 63 Subpart DDDDD	40 CFR 60, Appendix F, P3 40 CFR §60.13(d)(1) 40 CFR §63.8(c)(6) 40 CFR §63.7525(c)
Package Boiler	R 336.1213(3)[(a)] R 336.1301(1)[(a)]	40 CFR 60, Appendix F, P3
Main Stack	R 336.1301(1)[(a)]	40 CFR 60, Appendix F, P3

[(a)] Compliance is determined using the combiner equation at the main stack exit for all emission units, with the exception of opacity compliance for Recovery Furnace 40 CFR 63 Subpart MM and 40 CFR 60 Subpart BB, and Waste Fuel Boiler opacity compliance for 40 CFR 63 Subpart DDDDD.

6.3.1 Monitoring System Description

6.3.1.1 Opacity Analyzer

The opacity of particulate matter in stack emissions is continuously monitored by a measurement system based upon the principle of transmissometry. Light having specific spectral characteristics is projected from a lamp through the effluent in the stack or duct, and the intensity of the projected light is measured by a sensor. The projected light is attenuated because of absorption and scattered by the particulate matter in the effluent; the percentage of visible light attenuated is defined as the

opacity of the emission. Transparent stack emissions that do not attenuate light will have a transmittance of 100% or an opacity of 0%. Opaque stack emissions that attenuate all of the visible light will have a transmittance 0% or an opacity of 100%.

6.3.1.2 Combiner Equation

Main stack opacity is determined using the combiner equation (see Table 7-1). The combiner equation uses flow values and opacity readings from the Recovery Furnace, Waste Fuel Boiler, and Package Boiler to calculate a combined opacity value which is representative of opacity at the exit of the main stack. This monitoring strategy was approved by the MDEQ on February 10, 2004.

Table 6-4
Opacity CEMS Major Component Summary
Quinnesec Mill

Analyzer Component	Analyzer Information			Measurement Parameters					Comment
	Manufacturer	Model No.	Serial No.	Span	Range	Units	Dilution Ratio	Basis	
Recovery Furnace									
Opacity	SICK	Dusthunter T200	15388331	70	0 – 100	%			Span defined in §60.284(a)(1).
DAHS	VIM	CEMLink6							
Waste Fuel Boiler									
Opacity	SICK-Maihak	Dusthunter T200	15258341	70	0 – 100	%			Span defined in §60.45(c)(3).
DAHS	VIM	CEMLink6							
Package Boiler									
Opacity	SICK-Maihak	Dusthunter T200	15388332	70	0 – 100	%			Span not defined
DAHS	Foxboro I/A								
Main Stack									
Opacity Monitors – RF, WFB, PB	See above								
Flow Monitoring Equipment	See Table 5-4								
DAHS	VIM	CEMLink6							

6.4 INSTALLATION AND INITIAL CERTIFICATION

The installation and initial certification of the COMS were completed in accordance with applicable Performance Specification (PS) in 40 CFR 60 Appendix B. The applicable PS are summarized in Table 6-5. Documentation of the COMS certification is located in the Environmental files.

Table 6-5
Applicable Performance Specifications
Quinnesec Mill

Emission Unit	Analyzer	Applicable Performance Specification (PS)	Reference
Recovery Furnace	Opacity	PS-1	40 CFR 60 Appendix B
Waste Fuel Boiler	Opacity	PS-1	40 CFR 60 Appendix B
Package Boiler	Opacity	PS-1	40 CFR 60 Appendix B

6.5 ONGOING QUALITY ASSURANCE ACTIVITIES

The quality of the data collected by the COMS is assessed by the completion of ongoing quality assurance (QA) procedures. Procedure 3, of 40 CFR 60 Appendix F, establishes QA procedures for COMS used to demonstrate continuous compliance with opacity standards specified in new source performance standards (NSPS) promulgated by EPA pursuant to section 111(b) of the Clean Air Act. The effective date of Procedure 3 was November 12th, 2014. Ongoing quality assurance requirements for COMS are also defined in the applicable standards requiring opacity monitoring. The QA procedures for the COMS are summarized in Table 6-6.

Table 6-6
Ongoing Quality Assurance Frequency
Quinnesec Mill

Analyzer	Daily	Weekly	Monthly	Quarterly	Semi-annually	Annual
Opacity	CDT [a] Section 6.5.1.1.1 Status Indicator Check			Performance Audit[b] Section 6.5.2		Zero Alignment Section 6.5.3

[a] Calibration Drift Test (CDT)
[b] Performance audit consists of a calibration error test (CET), zero compensation check, and optical alignment check.

6.5.1 Daily

The following QA activities are completed at least once daily (i.e., every 24 hours) on the COMS. The daily QA activities performed on the COMS include a calibration drift test (CDT) and a status indicator check

6.5.1.1 Calibration Drift Test (CDT)

The COMS is designed to complete a zero and an upscale calibration drift test (CDT) in order to ensure that the transmitter/receiver is working correctly. A CDT is completed by the Mill pursuant to 40 CFR §60.13(d)(1), 60 Appendix F, P3 §10.1 and 40 CFR §63.8(c)(6) at least once every 24 hours in accordance with the procedures described herein. The CDT consists of an automatic simulated zero and upscale calibration device that allows the zero and upscale drifts to be determined. A CDT is automatically initiated every 24 hours by the COMS PLC. Additional CDT, if required, may be initiated by the Mill manually throughout the 24 hour period.

All optical and instrumental surfaces exposed to the effluent gases must be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical

surfaces and instrumental surfaces must be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity.

6.5.1.1.1 Span Value

Span is defined in an applicable subpart of the regulations as summarized in Table 6-7. The span values for the COMS are summarized in **Table 6-7**.

Table 6-7
COMS Span Summary
Quinnesec Mill

Emission Unit	Analyzer	Instrument Span[(a)]	Reference
Recovery Furnace	Opacity	100%	40 CFR §60.284(a)(1), 40 CFR §63.864(d)
Waste Fuel Boiler	Opacity	100%	40 CFR §60.45(c)(3) and Performance Specification 1 in appendix B to 40 CFR 60
Package Boiler	Opacity	100%	Not defined

[(a)]PS-1 section 3.5 defines Full Scale as the "The maximum data display output of the COMS. For purposes of recordkeeping and reporting, full scale will be greater than 80 percent opacity". The Quinnesec Mill's instrument span of 100% was approved on February 10, 2004 as part of the facility's Continuous Opacity Monitoring Plan.

6.5.1.1.2 CDT Reference Values

The daily calibration check values are specific to the manufacturer's functional design for the opacity monitor and are electronically performed. The zero and upscale calibration materials that are used in the CDT are summarized in Table 6-8.

Table 6-8
CDT Reference Summary
Quinnesec Mill

Analyzer	Zero	Upscale/Calibration Span
Opacity	0 %	70 %

6.5.1.1.3 CDT Calculation

The calibration drift for the COMS are computed by the DAHS for each reference level as described in Equation 6-1.

Equation 6-1 $$CD = |R - A|$$

Where:

CD = Calibration Drift.
R = Reference value of zero or upscale level introduced into the monitoring system.
A = Actual monitoring system response to the reference value (R).

6.5.1.1.4 CDT Pass/Fail Tolerance

Pursuant to 40 CFR §60.13(d)(1) and 40 CFR §63.8(c)(iii)(6) and 40 CFR 60 Appendix F, P3, the opacity monitors are adjusted whenever the zero CDT or the upscale CDT exceeds two (2) times the limit noted in the applicable performance specification listed in section 6.4. Performance Specification 1 states that the COMS zero and upscale calibration drift error must not exceed 2% opacity over a 24 hour period. Pursuant to 40 CFR 60 Appendix F, P3 §10.4(1), if the zero or upscale drift check exceed twice the applicable drift specification in PS-1 for any one day, the COMS is out-of-control (OOC). A CDT is "failed" if the results do not meet the acceptable criteria listed in Table 6-9 for the appropriate monitor. The failure is indicated on the calibration report generated by the DAHS.

Table 6-9
CDT Pass/Fail Tolerance
Quinnesec Mill

Analyzer	Adjustment Limit [(a)] (Data Valid)
Opacity	> 4.0 % Opacity

[(a)] Data is considered invalid and out-of-control and adjustments must be made to the monitoring system if the zero or upscale drift exceeds the drift tolerance by more than the listed value and/or the contamination is greater than 4%.

6.5.1.1.5 CDT Failure Procedures

If the calibration drift or contamination exceeds the specification limits listed in Table 6-9 the following procedures are recommended, but not limited to:

(1) Initiation of corrective maintenance procedures to repair the COMS.
(2) Initiation of corrective maintenance procedures to reduce contamination.
(2) Completion of a successful CDT.

6.5.1.1.6 CDT Data Validation

COMS are required to be adjusted whenever the zero CDT or the upscale CDT exceeds two (2) times the limit noted in the applicable performance specification as summarized in Table 6-9. The data collected after a failed CDT and prior to adjustments that result in a passing CDT is considered invalid data.

6.5.1.2 Status Indicator Check

The COMS is designed to complete a status indicator check automatically at least once every 24 hours. A status indicator check is completed by the Mill pursuant to 40 CFR Appendix F Procedure 3 §10.1(3). The status indicator check is a check of system self-diagnostics and status indicators. Error messages are communicated automatically from the monitor to the DAS via instrument output relays. In the event of a diagnostic parameter failure, the monitor will generate an alarm status. Appropriate corrective actions are implemented as required according to manufacturer's instructions. The Mill may opt to invalidate data based on the nature of the status alarm and required adjustments.

6.5.2 Quarterly

As required by 40 CFR 60 Appendix F Procedure 3, the Mill performs quarterly COMS performance audits. Audit results are submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) each quarter with the Quarterly CEMS Report. The quarterly COMS audits include a zero compensation (contamination) check, optical alignment assessment, and a calibration error check. Table 6-10 summarizes the pass/fail criteria for quarterly performance parameters.

Table 6-10
Performance Test Pass/Fail Tolerance
Quinnesec Mill

Parameter	Adjustment Limit [(a)] (Data Valid)
Zero Compensation	> 4% Opacity
Audit Calibration Error	> 3% Opacity
Optical Alignment	Light beam outside of acceptable alignment area

[(a)] Adjustments must be made to the monitoring system if audit parameters exceed the tolerance limits by more than the listed values. The COMS is considered out-of-control and data is invalid until parameters are within acceptable ranges.

6.5.2.1 Zero Compensation Check

Zero compensation is checked quarterly as required by 40 CFR 60 Appendix F P3 §10.2(1). The value of the zero compensation (contamination correction) applied at the time of the audit must not exceed 4% opacity. **If zero compensation is greater than 4%, data is considered out-of-control and invalid until corrective actions are implemented which reduce the zero compensation to less than 4%.**

6.5.2.2 Optical Alignment Assessment

Optical alignment is checked quarterly as required by 40 CFR 60 Appendix F P3 §10.2(3) in accordance with the manufacturer's recommendations. The optical alignment indicator must show proper alignment (i.e., falls within a specified reference area) at the time of the audit. In the event of misalignment, the monitor will generate an alarm status. Misalignment error messages are communicated automatically from the monitor to the DAS via instrument output relays. Appropriate corrective actions are implemented as required according to manufacturer's instructions. **If a condition of improper alignment is indicated, data is considered**

out-of-control and invalid until corrective actions are implemented which bring the alignment back into the acceptable range.

6.5.2.3 Calibration Error Check

A three-point calibration error test of the COMS is performed once each quarter as required by 40 CFR 60 Appendix F P3 §10.2(2). Three calibration attenuators (neutral density filters) meeting the requirements of PS-1 must be placed in the COMS light beam path for at least three nonconsecutive readings. All monitor responses must then be independently recorded from the COMS permanent data recorder. (Guidance for conducting this test is included in section 8.1(3)(ii) of PS-1). The low-, mid-, and high-range calibration error results must be computed as the mean difference and 95 percent confidence interval for the difference between the expected and actual responses of the monitor as corrected to stack exit conditions. The equations necessary to perform the calculations are found in section 12.0 of PS-1. For the calibration error method, the external audit device is used. It must be confirmed that the external audit device produces a measurement less than or equal to one percent opacity. Attenuators must be recalibrated annually unless two annual calibrations agree within 0.5% opacity – the attenuators may then be recalibrated once every five (5) years.

Attenuators and external audit devices are stored in a manner which keeps them clean and protects them from damage. Only appropriate lens cleaning materials recommended by the manufacturer are used to clean attenuators. External audit devices are handled carefully to prevent jarring or damage which could affect the alignment. Filters are handled to prevent scratches and other damage. Any damaged equipment is sent to the manufacturer for repair and recalibration, or replaced.

The COMS is considered OOC and the measured data is invalid when COMS parameters exceed the tolerances in Table 6-10.

6.5.3 Annually

As required by 40 CFR 60 Appendix F Procedure 3, the Mill performs an annual COMS zero alignment. The zero alignment is performed according to the manufacturer's recommendations and the requirements of Procedure 3. The COMS is removed from the stack and set up using the appropriate apparatus to allow clear path conditions. The COMS response to a clear condition and the COMS simulated zero response are recorded as percent opacity corrected to stack exit conditions. Zero compensation is disabled or recorded and applied to the COMS simulated zero condition. **The response difference in percent opacity to the clear path and simulated zero conditions is recorded as the zero alignment error.** The COMS is considered out-of-control if the zero alignment error does not meet the acceptable criteria listed in Table 6-11. The COMS simulated zero is then adjusted to provide the same response as the clear path condition, where the energy reaching the detector is between 90 and 110% of the energy reaching the detector under actual clear path conditions. Note that zero alignments may optionally be performed using a "zero zig". If this method is elected, off stack zero alignments are required once every three years or whenever major maintenance is performed (i.e., change light source).

Table 6-11
Zero Alignment Pass/Fail Tolerance
Quinnesec Mill

Analyzer	Adjustment Limit [(a)] (Data Valid)
Opacity	> 2% Opacity

[(a)] Adjustments must be made to the monitoring system if the zero alignment exceeds the tolerance limit by more than the listed value. The COMS is considered out-of-control and data is invalid until corrective adjustments can be made to bring the analyzer zero alignment within tolerance limits.

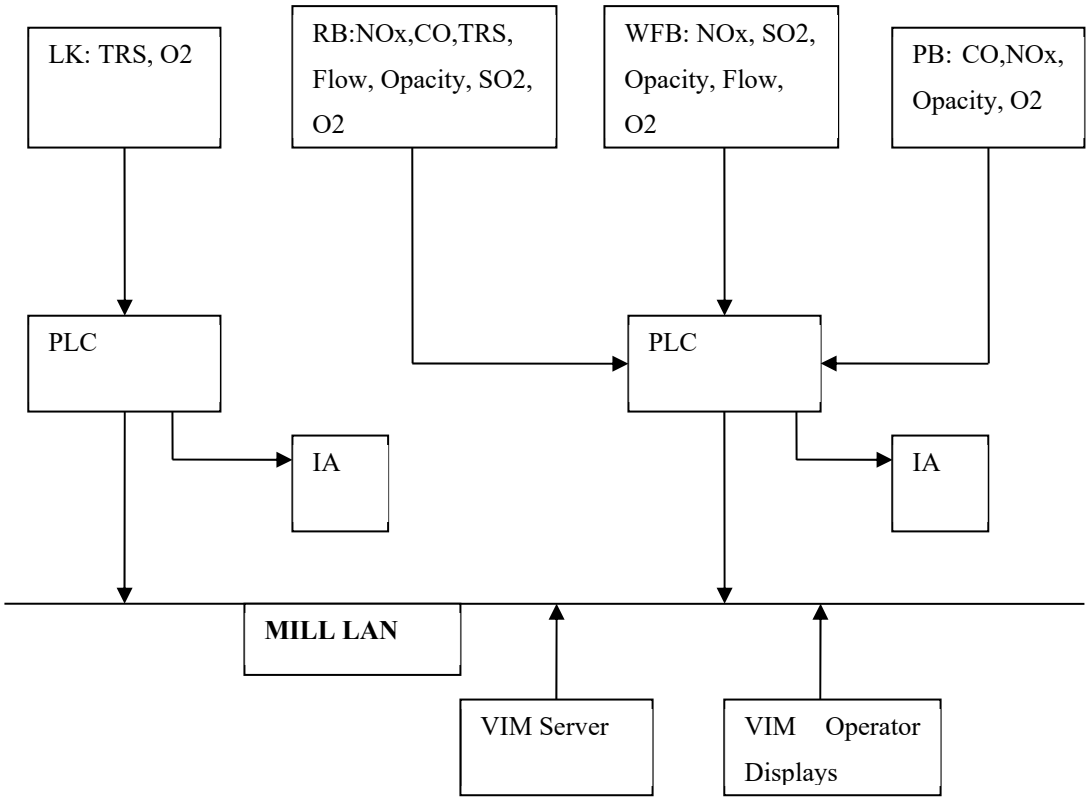
7 DATA ACQUISITION AND HANDLING SYSTEM

The data acquisition and handling system (DAHS) includes the CEMS hardware and software components that take the output from the analyzers, combine it with other information, store the necessary data, and compute emissions.

7.1 OVERVIEW

The VIM CEMLink6 (VIM) data acquisition and handling system software accomplishes data scaling, averaging, and calibration control in conjunction with the CEMS/COMS programmable logic controller (PLC). The CEMS/COMS PLC is the hardware interface between sampling and monitoring equipment and data acquisition computer system (see Figure 1 – CEMS/COMS Data Acquisition Diagram). The PLC is able to store up to 7 days of hourly average values and up to 4 days of 6-minute average values (opacity). As necessary, the PLC can automatically restore data into the VIM DAS. The main database in also backed up on a routine bases to insure maximum data availability for reporting functions. The VIM system provides various data displays, trending capabilities, reporting, and alarming for operational personnel.

Figure 1 - CEMS/COMS Data Acquisition Diagram



7.2 DATA VALIDATION

The following data validation rules are used by the DAS to generate averages. Only valid readings will be used to build an average. Typical reasons to invalidate CEMS data are: process down, failed a daily calibration check, analyzer malfunction, sample conditioning malfunction, maintenance, QA/QC tests.

- 1-Minute Average: consists of six readings taken at 10-second intervals. If more than one of these six readings is invalid, then the resulting 1-minute average will be considered invalid.
- 6-Minute Block Average: consists of all six 1-minute averages for a 6-minute block (total of 36 readings). If any one of these six 1-minute averages is invalid, then the resulting 6-minute average will be considered invalid.
- 60- Minute Rolling Average: The opacity 60-minute rolling average requires 10 valid 6-min block averages.
- 1-Hour Average: The 1-hour block average includes all valid 1-minute averages for an hour starting with minute 00 through minute 59. One valid minute data point must be collected per operating quadrant for a valid hourly average.
- 3-Hour Block Average): The 3-hour block average will include all the valid 1-hour averages. (3 valid hours are required).
- 3-Hour Rolling Average): The 3-hour rolling average will include all the valid 1-hour averages. (3 valid hours are required).
- 8-Hour Rolling Average: The 8-hour rolling average includes all the valid 1-hour averages. (6 valid hours are required).
- 12-Hour Block Average: consists of all the valid 1-hour averages that occur for a 12-hour period. The AM average will consist of hours 0 to 11. The PM average will consist of hours 12 to 23. The 12-hour average will be calculated as the arithmetic mean of all the valid 1-hour averages in the 12-hour period. Calculating the 12-hour averages for TRS raw and O2 and then using these values in the correction equation will generate the TRS corrected 12-hour average (2 valid hours are required).
- Daily Block Average: consists of all the valid 1-hour averages that occur for a calendar day (hours: 00 – 23). The 24-hour averages will be updated once a day. All 24-hour averages will be calculated as an arithmetic mean (18 valid hours are required).

- 24-Hour Rolling Average: consists of all the valid 1-hour averages that occur for a calendar day (hours: 00 – 23). The 24-hour averages will be updated once a day. All 24-hour averages will be calculated as an arithmetic mean (18 valid hours are required).

- 30-Day Rolling Average: consists of all the valid 1-hour averages that occur for the previous 30 operating days. The 30-day rolling averages will be updated once a day. All averages will be calculated as an arithmetic mean. A valid 30-day average must consist of data from 22 or more valid operating days. Per Subpart Db, only one operating hour is required to have a boiler operating day.

- Startup/Shutdown Average (Recovery Furnace): consists of all the valid 1-hour averages, up to a maximum of 12 hours, during startup or shutdown periods.

7.3 EMISSION FORMULAS

Emissions for each source are calculated by the VIM software using the formulas presented below:

Table 7-1
Emissions Calculations
Quinnesec Mill

Waste Fuel Boiler	NO_x Emission Limit: Coal &/or Wood = 0.70 lb/MMBtu, 3-Hr Ave Gas Only = 0.20 lb/MMBtu, 3-Hr Ave Wood + Gas = 0.30 lb/MMBtu, 3-Hr Ave Gas + Coal = (% gas Heat input x 0.2) + (% coal heat input x .7) lb/MMBtu, 3-Hr Ave Gas + Coal + Wood = ((% gas heat input x 0.2) + (% coal heat input x 0.7))/(% gas heat input + % coal heat input) lb/MMBtu, 3-Hr Ave NOx Emissions : NO_x lbs/MBTU = (NO_x) * (F) * (20.9/20.9 - O_2%) (NO_x) = ppm NO_x * 1.194 E-7 (F) = F Factor = ((% gas heat input x 8710) + (% wood heat input x 9600) + (% coal heat input x 9780)) / (% gas heat input + % wood heat input + % coal heat input) O_2% = Stack Excess O_2% SO_2 Emission Limit: (1.2 lbs/MBTU, 3 Hour Average) SO_2 lb/MBTU = SO2 * (F) * (20.9/20.9 - O_2%) (SO_2) = ppm SO_2 * 1.66 E-7

	(F) = F Factor = 9583 O_2% = Stack Excess O_2% NO_x Emission Limit: (436 lbs/Hour, 1 Hour Ave) NO_x lb/hour = (ppm NO_x)(1.194 E-7)(DSCF/min)(60min/hr) SO_2 Emission Limit: (No CVGs 476 lbs/Hour, With CVGs 1016 lbs/Hour, 1 Hour Ave) SO_2 lb/Hour = (ppm SO_2)(1.66 E-7)(DSCF/min)(60 Min/Hr) Opacity Emission Limit: (Daily Block Average 10%, per §63.7575)
Main Stack	Opacity Emission Limit (Six minute Average 20%) Calculated according to EPA Reference Document EMTIC TID-011 Combiner Equation. Opacity =100*(1-POWER(10,((RF flow*LOG10(1-RF opacity/100)+WFB flow*LOG10(1-WFB opacity/100)+PB flow*LOG10(1-PB opacity/100))/(C9+E9+G9))))
Recovery Boiler	TRS Emission Limits: (5.0 ppm Corrected to 8% O_2, 12 Hour Average) TRS ppm (Corrected) = TRS ppm (Measured) * ((20.9 - 8)/(20.9 - O_2%)) O_2% = Stack Excess O_2% SO_2 Emission Limit: (50 ppm Corrected to 8% O_2, 24 Hour Average) SO_2 ppm (Corrected) = SO_2 ppm (Measured) * ((20.9 - 8)/(20.9 - O_2%)) O_2 = Stack Excess O_2% NO_x Emission Limit: (110 ppm Corrected to 8% O_2, 24 Hour Rolling Average) NO_x ppm (Corrected) = NO_x ppm (Measured) * ((20.9 - 8)/(20.9 - O_2%)) O_2% = Stack Excess O_2% CO Emission Limit: (425 ppm Corrected to 8% O_2, 3 Hour Rolling Average) (380 ppm Corrected to 8% O_2, 8 Hour Rolling Average) CO ppm (Corrected) = CO ppm (Measured) * ((20.9 - 8)/(20.9 - O_2%)) O_2% = Stack Excess O_2%
Lime Kiln	TRS Emission Limits (8.0 ppm Corrected to 10% O_2, 12 Hour Average) TRS ppm (Corrected) = TRS (Measured) * ((20.9 - 10)/(20.9 - O_2%))

	O_2% = Stack Excess O_2%
Package Boiler	NO_x Emission Limit: (0.10 #/MBTU, 30-Day Rolling Average) (Calculated to a 30 Day Rolling Average) NO_x #/MBTU = (NO_x) * (F) * (20.9/20.9 - O_2%) (NO_x) = ppm NO_x * 1.194 E-7 (F) = F Factor = 8710 O_2% = Stack Excess O_2% NO_x Emission Limit: (41.9 lbs/Hour, 1 Hour Average) NO_x lb/hour =(ppm NO_x)(1.194 E-7)(30000 DSCF/min)(60min/hr) CO Emission Limit: (0.12 #/MBTU, 1 Hour Average, Steam > 80 KPPH) CO #/MBTU = (CO) * (F) * (20.9/20.9 - O_2%) (CO) = ppm CO * 7.267 E-8 (F) = F Factor = 8710 O_2% = Stack Excess O_2% CO Emission Limit: (25.5 lb/Hour, 1 Hour Average, Steam < 80 KPPH) (50.3 lb/Hour, 1 Hour Average, Steam > 80 KPPH) CO lb/Hour = (ppm CO)(7.267 E- 8) (30000 DSCF/MIN)(60 min/hour) CO Emission Limit: (195 ppm, 1 Hour Average, Steam < 80 KPPH)

8 PREVENTATIVE MAINTENANCE

The primary objective of a comprehensive preventative maintenance program is to help ensure the timely and effective completion of a measurement effort. The Quinnesec Mill's preventative maintenance program is designed to minimize the downtime of CEMS and COMS equipment due to component failures. Maintenance schedules and procedures are maintained in the mill maintenance computer system and are managed by the area department maintenance planners.

All maintenance performed on a CEMS and COMS is recorded in the maintenance log. The maintenance logs will be used to track the maintenance history of the equipment. The instrument electrician or mechanic shall complete a calibration/inspection form and note what (if any) *problems* were identified.

The maintenance frequency will be based on the manufacturer's recommendations, equipment history, or the industry standard. Adjustments in maintenance frequency will be made as necessary.

8.1 CORRECTIVE ACTIONS FOR MALFUNCTIONS

In the event of CEMS/COMS excess drift alarm or system fault, the Control Room Operator will call the E&I technician to check the affected system. Manufacture's operating manuals include troubleshooting procedures to help maintenance troubleshoot the systems. These manuals are kept in the CEMS/COMS structures and electronically in the Document Management System (DMS). The mill also maintains spare analyzers (SO2, NOx, and CO) to be used as backups to the primary certified analyzers. The procedure for installation, calibration, and QA of a spare analyzer is available in the Quinnesec Mill document management system (Operational Support/Environmental/COMS-CEMS-VIM/CEMS).

8.2 SPARE PARTS

The maintenance activities described in this section and an adequate inventory of spare parts are required to minimize equipment downtime. The spare parts inventory targets those parts and supplies which:

- are subject to frequent failure;
- have limited useful lifetimes; or
- cannot be obtained in a timely manner should failure occur.

Manufacture recommended spare parts for the COMS/CEMS are maintained on-site. Parts inventory is listed in the mill's maintenance computer system.

9 ROLES AND RESPONSIBILITIES

The following identification of roles and responsibilities will assist the mill in determining appropriate resources to ensure that timely troubleshooting and maintenance is conducted to insure a high level of system accuracy and to minimize downtime.

Operations:

- The Operating Departments, including Maintenance, are responsible for overall CEMS/COMS operation.
- The Control Room Operator is the first line in detecting system issues, reacting to alarms and calibrations failures.
- The Control Room Operator is responsible for calling appropriate support (below) in the event of any issues with the CEMS/COMS.

Maintenance:

- E&Is are responsible for ensuring the completion of successful analyzer daily calibration checks. This includes maintaining an adequate supply of calibration gas (daily calibration gas cylinder management).
- An E&I Technician should be the first person called to troubleshoot problem to determine if the problem is due to an analyzer, PLC, database computer, serial link problem, or network malfunction.

- The E&I Technicians have the primary responsibility for repair and maintenance of the following: probe boxes, sample systems, analyzers, and PLC's.
- The E&I Technicians are responsible for completion of the COMS zero alignment procedure.

Information Technology:

- Information Technology has the primary responsibility for maintenance and troubleshooting of any computer network communication problems.
- Information Technology is responsible for maintaining the VIM server and serving as a VIM support resource.

Central Lab Analysts:

- Central Lab has primary responsibility for reviewing and verifying data for the daily CEMS/COMS report.
- Central Lab is responsible for performing quarterly cylinder gas audits (CGA) and COMS filter audits. The Central Lab may perform non-routine audits if requested by operations, and on an as needed basis. This includes maintaining an adequate supply of audit gases (audit gas cylinder management).
- Central Lab provides support for the annual RATA.
- Central Lab is a support resource for the reporting system.
- Central lab is responsible for ensuring opacity filters are calibrated.
- Central lab has the primary responsibility for maintaining the gas cylinder certification sheets and cylinder inventory.

DAS Vendor (VIM Technologies, Inc.):

- VIM provides PLC and DAS and reporting system support. A mill member (typically Information Technology, Central Lab, Environmental, or E&I) will contact VIM when needed.

Environmental:

- Environmental is responsible for maintaining this QA plan.
- Environmental is responsible for ensuring the completion of CEMS/COMS initial certifications, RATAs, and temporary CEMS/COMS replacement QA documentation.
- Environmental is responsible for responsible for quarterly compliance reporting of CEMS/COMS excess emissions and quality assurance activities.
- Environmental is a support resource for the VIM reporting system.

10 REVISIONS

Revisions to the Continuous Monitoring System Quality Assurance Plan are documented in Table 10-1.**Table 10-1**
Continuous Monitoring System Quality Assurance Plan Revisions Log
Quinnesec Mill

Date	Reviser	Revision Description ***Brief Revision Description and Justification***
June 2019	Paula LaFleur	Original plan rewrite and DMS publication
August 2021	Paula LaFleur	Updated with 2021 PTI 99-20 emission limits for recovery furnace NOx and CO. Updated data validation section with new averaging periods (Section 7).
December 2021	Paula LaFleur	Removed audit zero check and averaging time check from the quarterly COMS QA per Procedure 3 of Appendix F (Section 6.5.2).
2/18/24	Paula LaFleur	Removed references to Verso; changed logo to Billerud; updated TRS limits in Table 7-1 to reflect latest permit.
8/19/24	Paula LaFleur	Updated Recovery Furnace and Lime Kiln emissions limits in Table 2-3 to reflect revisions from PTI99-20B (2023). Updated Package Boiler CO monitor serial number in Table 2-5 to analyzer certified in 2021. Added reference method 16C to Table 2-14 for TRS. Corrected Emission unit references in Table 6-5. Deleted reference to 2-hour average. Added that manuals are also kept electronically in the DMS to section 8.1. Other minor revisions.

BILLERUD	**Paper Machine Good Operating Practices for the Minimization of Particulate Emissions**	Billerud Quinnesec LLC Release Date: February 2023 Replaces: NA

Q41 Paper Machine Description

Billerud Quinnesec LLC's Q41 paper machine, ROP SRN B7192, EU1227-1, produces various grades of coated paper. Pulp from storage tanks is mixed with starch and other supplemental chemicals and additives. At the front end of the paper machine the pulp stock is distributed from the headbox onto a moving wire mesh. A sheet is formed as the stock moves through the forming section and water is removed. A top forming section is also used utilized to improve the sheet properties and remove additional water. The sheet then passes through the press section, steam dryer section and machine calendar section.

After the machine calendar the paper is coated and dried using natural gas fired air flotation dryers followed by additional steam drying sections. The paper is then wound onto reels and supercalendered off the machine to add additional smoothness and gloss. The paper is processed into smaller rolls per customer specifications.

Paper Machine Particulate Emissions Background

Non-tissue paper machines such as Q41 are considered to have very low emissions of particulate matter (PM). Historically there has been very little information in general on paper machine particulate emissions. In 2007 NCASI published a Technical Bulletin, TB942, on the study of particulate emissions of five separate paper machines of various types and configurations. Some of the challenges with quantifying paper machine particulate emissions were described in this NCASI study:

- Very low emission rates required extended sampling runs of 16 or more hours.
- EPA Method 201A cannot be used for vent exhausts below the dew point. Therefore, all filterable PM was quantified as filterable PM10 and PM2.5 per EPA guidance, thus overstating these emissions.
- Many runs were under the method detection limits (MDL) and limits of quantitation (LOQ), thus these fractions were reported as the detection limit (or ½ the detection limit for runs where all samples were below the MDL, again overstating emissions.
- Many paper machine vents are not designed to meet the EPA Method 1 criteria, therefore stack extensions and straightening vanes were fabricated and installed on many vents.
- Paper machines typically have 15 or more individual vents, so it was not practical to test all vents on each source, untested vent emissions were estimated from a vent with similar characteristics, and total paper machine emissions were estimated based upon the combined tested and estimated vents.

Quinnesec's Q41 Paper machine has a total of 21 vents from the former, press, coater, and dryer sections of the paper machine. The Q41 coated paper machine is most similar to Mill E in NCASI's TB942 study, therefore the emission factors from Mill E were used to develop emission rates for the various exhaust vents from Q41 and the overall Q41 particulate emissions rates.

Characterization of Q41 emissions

Based upon Mill E estimated emission factors from the NCASI study, particulate emissions were estimated for the various Q41 Paper Machine Vents at maximum operating rates as follows:

Estimated Q41 Paper Machine Vent Emissions		
Q41 Vent	lb/hr PM10	lb/hr PM2.5
fourdrinier exhaust	0.350	0.300
vacuum exhaust A	0.350	0.300
vacuum exhaust B	0.350	0.300
saveall exhaust	0.350	0.300
bell-form exhaust	0.350	0.300
4th press pulper exhaust	0.350	0.300
dryer exhaust A	0.156	0.134
dryer exhaust B	0.156	0.134
mach calender pulper exhaust	0.350	0.300
1st ctr zone 1	0.129	0.110
1st ctr zone 2	0.129	0.110
1st ctr zone 3	0.129	0.110
1st coater pulper exhaust	0.350	0.300
8th sect. dryer exhaust	0.156	0.134
2nd ctr zone 4	0.129	0.110
2nd ctr zone 5	0.129	0.110
2nd ctr zone 6	0.129	0.110
2nd coater pulper exhaust	0.350	0.300
9th sect. dryer exhaust	0.156	0.134
reel pulper exhaust	0.350	0.300
rereeler pulper exhaust	0.350	0.300

The estimated PM emission factors used for the Q41 paper machine from NCASI study, Mill B are as follows:

Mill Code	Filterable PM lb/ADTFP	Filterable PM_{10} lb/ADTFP	Filterable $PM_{2.5}$ lb/ADTFP	CPM lb/ADTFP	total PM_{10} lb/ADTFP	total $PM_{2.5}$ lb/ADTFP
B	0.04	0.04	0.03	0.03	0.07	0.06

Based on the above data, it can be assumed that there is an approximately equal distribution of particulate emissions from the wet and dry ends of the paper machine. It is also assumed that condensable and filterable particulate emissions are approximately equal. Based upon the estimated

Q41 vent emission distribution and PM fractions, the strategies outlined below have been determined to represent "good operating practices" for the minimization of Q41 particulate emissions.

Wet End Good Operating Practices for the Minimization of Particulate Emissions

The wet end of the paper machine vents from the fourdrinier, vacuum systems, saveall, and press sections. Good operating practices (GOP) to minimize emissions from the wet end of Q41 include the following:

1. Water showers and roll doctors are utilized to dislodge loose fibers and fillers from the paper machine forming sections. Water and fiber and fillers are collected for reuse in the white water reclaim system and are thus prevented from being emitted from the paper machine vents as filterable particulate matter. In addition, water, fiber, and fillers can be recycled back to the process, thus reducing the load on the wastewater treatment system and minimizing fresh water use.
2. Wet end exhaust systems are equipped with mist eliminators to remove water and entrained particulate from these exhaust streams.
3. Wet end pulpers are equipped with knock down showers and screens which minimize particulate in the pulper exhaust streams.
4. Management of VOC: White water is evaluated monthly and used to estimate VOC emissions. Abnormally high values will be investigated and mitigated. Managing VOC emissions serves to minimize the impact and emissions of condensable PM from the paper machine.

Dry End Good Operating Practices for the Minimization of Particulate Emissions

The dry end of the paper machine vents from the natural gas coater sections and steam dryer sections. Good operating practices to minimize particulate emissions from the dry end of Q41 include:

1. Natural gas is the only fuel used in the air floatation dryer sections immediately following the coaters.
2. Steam dryer sections are cleaned to minimize the buildup of coating and fiber on the dryer cans.
3. A dryer hood heat recovery heat recovery system is utilized to minimize fossil fuel energy for paper drying.
4. Dry end pulpers are equipped with knock down showers and screens which minimize particulate in the pulper exhaust streams.

Equipment Routine and Periodic Inspection and Maintenance Activities

Planned outages are an opportunity to conduct maintenance on the paper machine systems which serve to ensure good operating practices. In addition to planned outage activities, maintenance and inspection activities are conducted as time permits during unplanned machine shutdowns.

1. Paper machine felts are cleaned and replaced routinely and as necessary.
2. Shower jets flows are monitored and cleaned as needed and/or during planned outages.
3. Cleaning, inspection of doctor blades and replacement of worn doctor blades is conducted during planned outages and as necessary.

4. Dryer cleaning – Tec Dryers are inspected and blown down as needed and/or planned outages. Steam dryer sections are inspected and cleaned as necessary and/or during planned outages.

Responsibilities

It is the responsibility of Operations and Maintenance to perform routine and non-routine maintenance and inspections of the paper machine systems included in the GOP for emissions minimization.

It is the responsibility of the Central Lab and Environmental to conduct white water testing and document VOC emissions for compliance with paper machine VOC limits.

Documentation

Documentation of inspections and maintenance activities related to GOP for emissions minimization are kept in the operating department and/or the SAP maintenance tracking system.