



global environmental solutions

Weyerhaeuser NR Company

Sutton OSB Mill

Facility ID No. 007-00016

Heaters, West Virginia

Rule 13 / Title V Permit Modification Application

SLR Ref: 116.00687.00030

April 2016



Sutton OSB Mill Rule 13 / Title V Permit Modification Application

Prepared for:

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, WV 25301

This document has been prepared by SLR International Corporation. The material and data in this permit application were prepared under the supervision and direction of the undersigned.

A handwritten signature in blue ink that reads "Chris Boggess". The signature is written in a cursive style and is positioned above a horizontal line.

Chris Boggess
Associate Engineer

A handwritten signature in blue ink that reads "Jesse Hanshaw". The signature is written in a cursive style and is positioned above a horizontal line.

Jesse Hanshaw, P.E.
Principal Engineer

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Notes:

- ATTACHMENT H – Not applicable – No resulting change to SDS
- ATTACHMENT K – Not applicable – No resulting change to fugitive emissions
- ATTACHMENT L – Not applicable – No resulting change to emission units
- ATTACHMENT Q – Not applicable – No information claimed confidential

APPLICATION FOR PERMIT

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT
AND
TITLE V PERMIT REVISION
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

- CONSTRUCTION MODIFICATION RELOCATION
 CLASS I ADMINISTRATIVE UPDATE TEMPORARY
 CLASS II ADMINISTRATIVE UPDATE AFTER-THE-FACT

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT MINOR MODIFICATION
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant (as registered with the WV Secretary of State's Office): Weyerhaeuser NR Company		2. Federal Employer ID No. (FEIN): 263481257	
3. Name of facility (if different from above): Sutton OSB Mill		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: 3601 Gauley Pike Heaters, WV 26627		5B. Facility's present physical address: 3601 Gauley Pike Heaters, WV 26627	
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇒ If YES , provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A . ⇒ If NO , provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation:			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇒ If YES , please explain: The applicant owns the site. ⇒ If NO , you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Engineered Wood Products Facility producing Oriented Strand Board (OSB)		10. North American Industry Classification System (NAICS) code for the facility: 321219	
11A. DAQ Plant ID No. (for existing facilities only): 007-00016		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R30-00700016-2013 R13-1761G	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- ⇒ For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- ⇒ For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Traveling along I-79, exit at Flatwoods (Exit 67) and navigate towards U.S. Rt 19. Travel North on U.S. Rt. 19 for approximately five (5) miles and the facility will be located on your left

12B. New site address (if applicable):

N/A

12C. Nearest city or town:

Heaters

12D. County:

Braxton

12.E. UTM Northing (KM): 4,290.213

12F. UTM Easting (KM): 529.939

12G. UTM Zone: 17N

13. Briefly describe the proposed change(s) at the facility:

This permit application will account for the removal of the Regenerative Catalytic Oxidizers (RCO), and replacing them with a Biofilter Scrubber. The site will be able to maintain compliance with the PWCP MACT and reduce overall emissions from combustion.

14A. Provide the date of anticipated installation or change:

- ⇒ 08/01/2016 or upon permit issuance

14B. Date of anticipated Start-Up if a permit is granted:

10/2016

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:

Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? **YES** **NO**

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

- ⇒ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

- ⇒ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.

⇒ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- | | | |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input type="checkbox"/> Incinerator | <input type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input type="checkbox"/> Indirect Heat Exchanger | |
| <input type="checkbox"/> General Emission Unit, specify: Internal Combustion Engines Data Sheet, Glycol Dehydration Unit Data Sheet | | |

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |

Other Collectors, specify – BioOxidation (Biofilter)

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

➤ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES NO

➤ If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. Certification of Information. To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned **Responsible Official** / **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE  DATE: 4/01/16
(Please use blue ink) (Please use blue ink)

35B. Printed name of signee: Jesse Merica		35C. Title: Mill Manager
35D. E-mail: Jesse.Merica@weyerhaeuser.com	36E. Phone: 304-765-4289	36F. FAX 304-765-4280
36A. Printed name of contact person (if different from above): Jesse Hanshaw, P.E.		36B. Title: Principal Engineer, SLR International Corporation
36C. E-mail: jhanshaw@slrconsulting.com	36D. Phone: 681-205-8949	36E. FAX: 681-205-8969

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate | <input type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet |
| <input checked="" type="checkbox"/> Attachment B: Map(s) | <input type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s) |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s) |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s) | <input checked="" type="checkbox"/> Attachment P: Public Notice |
| <input checked="" type="checkbox"/> Attachment G: Process Description | <input type="checkbox"/> Attachment Q: Business Confidential Claims |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input checked="" type="checkbox"/> Attachment R: Authority Forms |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table | <input checked="" type="checkbox"/> Attachment S: Title V Permit Revision Information |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
 - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
 - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
 - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
 - NSR permit writer should notify a Title V permit writer of draft permit,
 - Public notice should reference both 45CSR13 and Title V permits,
 - EPA has 45 day review period of a draft permit.

ATTACHMENT A

BUSINESS CERTIFICATE

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Attachment A

State of West Virginia



Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

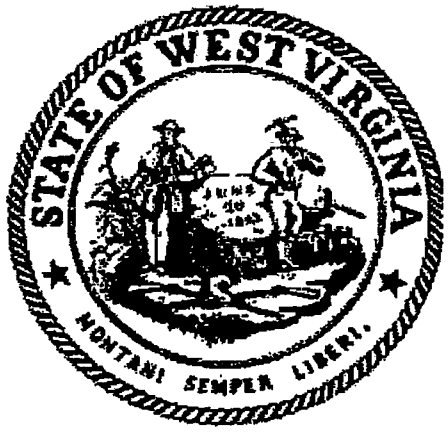
WEYERHAEUSER NR COMPANY

was incorporated under the laws of West Virginia and a Certificate of Incorporation was issued by the West Virginia Secretary of State's Office on October 15, 2008.

I further certify that the corporation has not been revoked by the State of West Virginia nor has the West Virginia Secretary of State issued a Certificate of Dissolution to the corporation.

Accordingly, I hereby issue this

CERTIFICATE OF EXISTENCE



Given under my hand and the Great Seal of the State of West Virginia on this day of June 23, 2011

Natalie E. Tennant
 Secretary of State

ATTACHMENT B

MAP

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016



DATE
APRIL 2012

DRAWN BY
MHR

Weyerhaeuser NR Company
SUTTON SITE
BRAXTON COUNTY – HEATERS, WEST VIRGINIA

REVISION
0

ATTACHMENT A – AREA MAP

ATTACHMENT C

INSTALLATION AND START-UP

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

INSTALLATION AND STARTUP SCHEDULE

The permittee will start construction as soon as the 45CSR13 permit is issued. However, construction is anticipated to begin August 1, 2016 and startup is planned for fall of 2016.

ATTACHMENT D

REGULATORY DISCUSSION

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

REGULATORY DISCUSSION

APPLICABLE REGULATIONS

The modification of control at the Sutton Mill is subject to the following Regulations:

Federal and State:

45 CSR 13 – Permits for Construction, Modification, Relocation, and Operation of Stationary Sources of Air Pollutants.

WV DAQ permit number R13-1761G will be revised to accommodate the biofilter control device as a replacement to the existing regenerative catalytic oxidizers (RCO)s. The new control strategy will reduce the facility's natural gas usage along with combustion products. The new biofilter has been designed to control water soluble VOCs such as the MACT HAPs.

It is anticipated that the old RCO temperature limits and monitoring requirements will be removed from the permit and replaced with biofilter bed temperature operating limits which are to be defined during initial compliance testing. Additionally, it is envisioned that the routine control device maintenance exemption stipulation and language will be removed from permit condition 4.1.6 and 4.4.8 since the RCO's it applied to will no longer be utilized. This language should be replaced with new language specific to the RCDME as it will pertain to the new biofilter control

45 CSR 30 - Operating Permit Requirements.

Title V permit R30-00700016-2013 will be modified to also incorporate the new control scheme. Additionally the site's annual emission estimates were increased slightly to reflect additional press operating time. The annual average press rate used for annual emission calculations was changed from 80.25 MSF/hr to 86 MSF/hr. This does not change the press' maximum operating capacity, which remains the same at 73 tons/yr, but does reflect less downtime during the year.

MACT compliance testing will require the new biofilter to establish the operating range for the biofilter bed. The request to modify the Title V permit has been requested via Attachment S of this Rule 13 permit application.

40 CFR 63 Subpart DDDD - *National Emission Standards for Hazardous Air Pollutants from Plywood and Composite Wood Products Facilities.*

The facility is a major source of HAPs and is currently subject to the Plywood and Composite Wood Products (PCWP) MACT. The proposed control device change and compliance option adjustment will be defined within this subpart. The new biofilter would like to have the option to comply with each of the following control options because of the uncertainty surrounding the new design:

- THC as carbon < 20 ppm or
- Reduction in Methanol of 90% or
- A reduction in Formaldehyde of 90%

Additionally, under this Federal Standard routine control device maintenance exemption (RCDME) downtime is allowed for a limited amount of time not to exceed 3% of annual operating hours. The WV Compliance and Enforcement Inspector approved the RCDME, which will now need to be replaced and approved new to reflect the new equipment characteristic.

State Only:

45 CSR 4 - No Objectionable Odors.

45 CSR 17 - Fugitive Particulate Emissions.

NON-APPLICABILITY DETERMINATIONS

The following requirements have been determined “not applicable” due to the following:

40 CFR 61 – Asbestos Removal and Handling

This facility is subject to the asbestos inspection and notification requirements. However, the Sutton Mill was built as an asbestos free facility so the removal of the existing (RCO)s will not trigger this requirement.

40 CFR 64 - Compliance Assurance Monitoring

The biofilter’s operations are included as an affected source under the PWCP MACT, 40 CFR 63, Subpart DDDD, which would qualify them as a 112 exemption under the CAM applicability section.

45 CSR 21 - To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds.

The facility is not located in a WV County designated applicable to the RACT requirements of this state standard. Should Braxton County become an ozone maintenance area Weyerhaeuser shall comply with all Rule 21 requirements.

45 CSR 27 - To Prevent and Control the Emissions of Toxic Air Pollutants.

This rule is applicable to all Toxic Air Pollutants listed in this regulation and defines Best Available Control measures to abate emissions from sources exceeding the applicability thresholds. The MDI emissions from the proposed modification are not listed as a regulated pollutant under this State Rule.

ATTACHMENT E

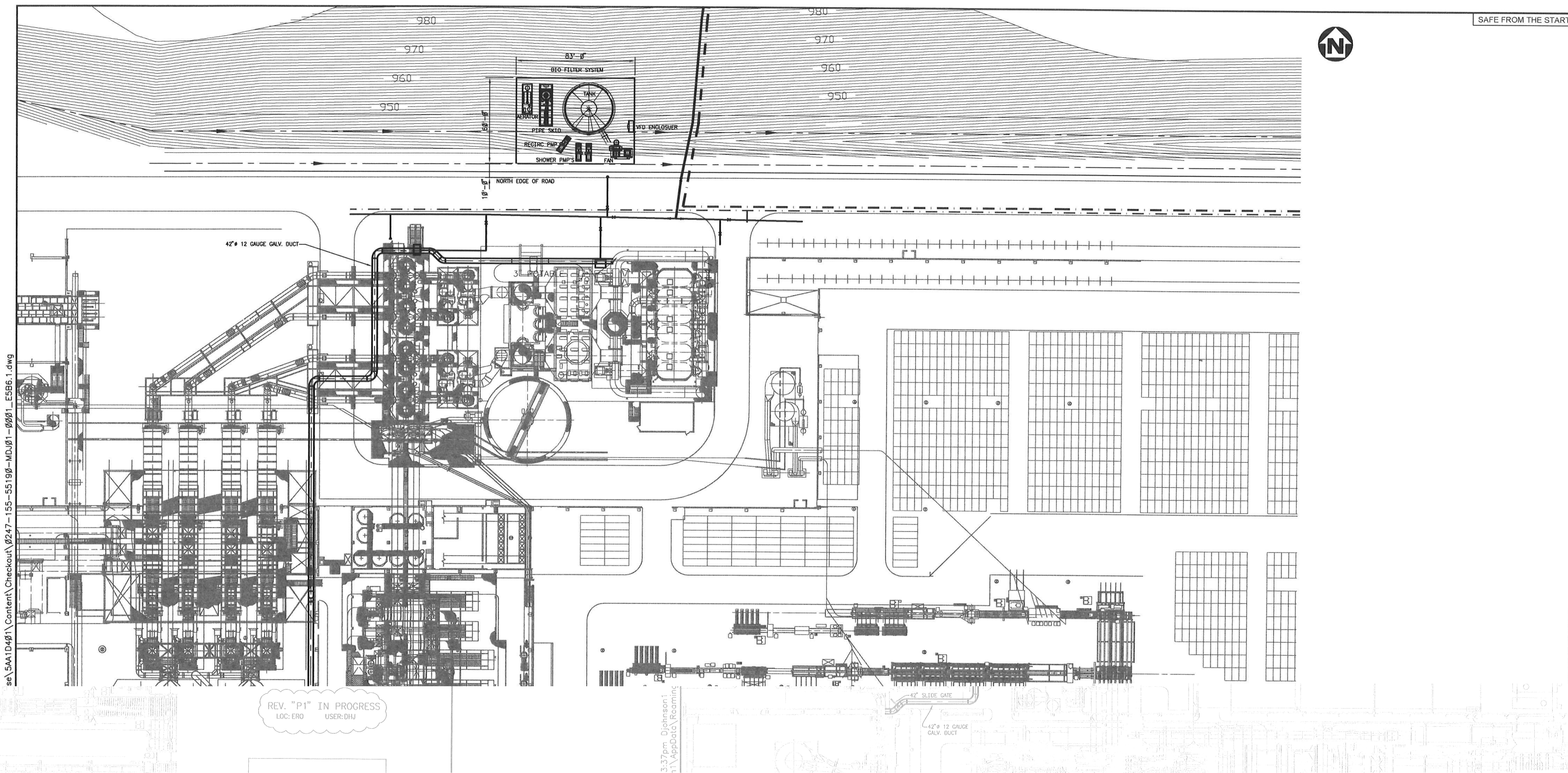
PLOT PLAN

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016



se\5AA1D401\Content\Checkout\0247-155-55190-MD.01-0001_E5B6.1.dwg

REV. "P1" IN PROGRESS
LOC: ERO USER: DHJ

3:37pm D:\Johnson1
1\AppData\Roaming

ATTACHMENT F

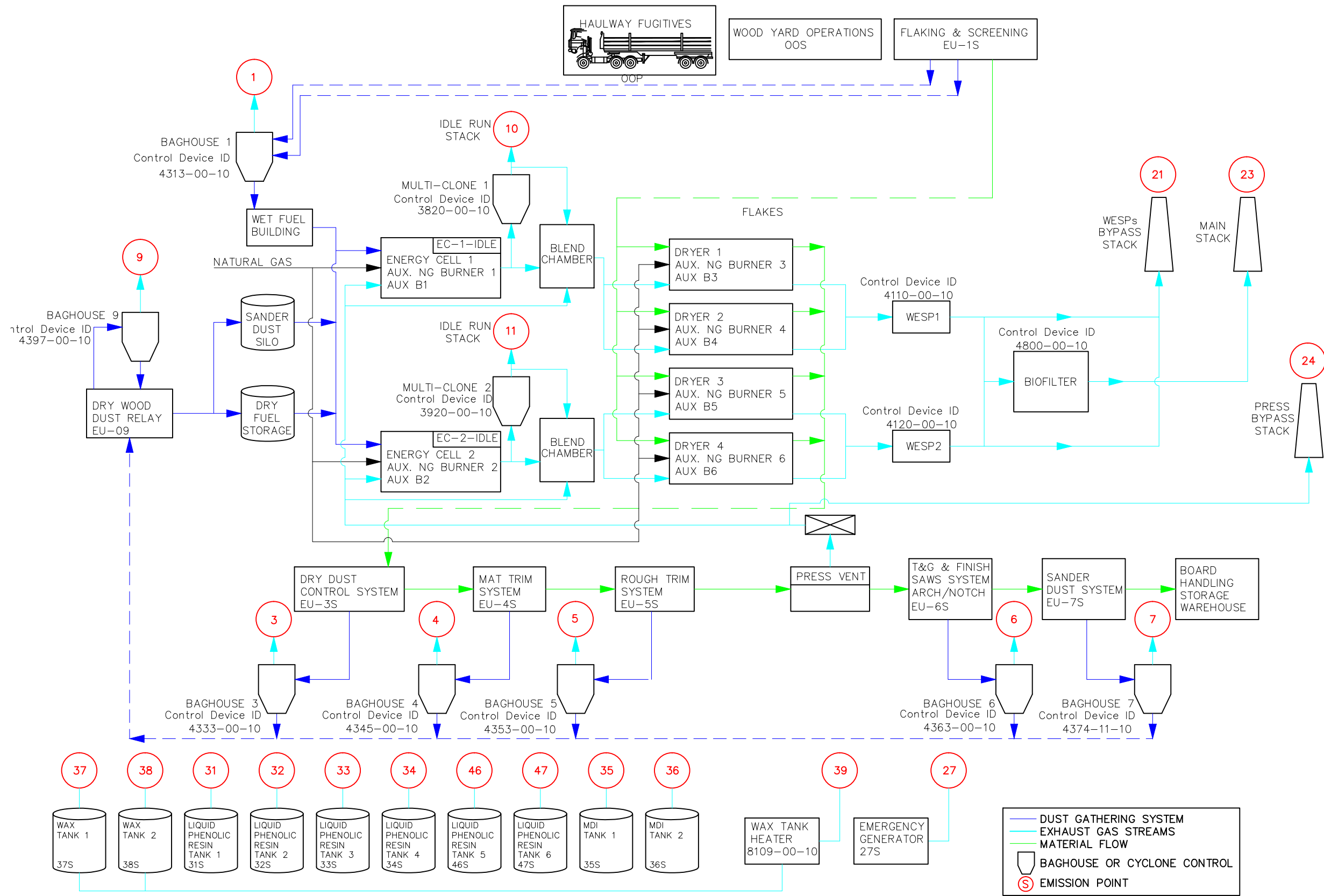
PROCESS FLOW DIAGRAM

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

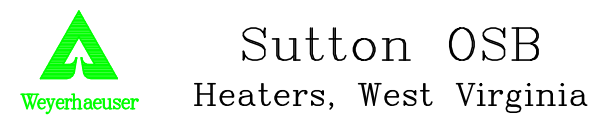
April 2016



NOTES:

- Energy Cell No. 1 Wood dust burner ID. 3800-00-10
Aux. natural gas burner ID. 3816-00-11
- Energy Cell No. 2 Wood dust burner ID. 3900-00-10
Aux. natural gas burner ID. 3916-00-11
- Dryer No. 1 Aux. natural gas burner ID. 3130-00-11
- Dryer No. 2 Aux. natural gas burner ID. 3230-00-11
- Dryer No. 3 Aux. natural gas burner ID. 3330-00-11
- Dryer No. 4 Aux. natural gas burner ID. 3430-00-11
- OSB Press Equipment ID. 4700-00-10

REV	DATE	BY	APPD	REVISION DESCRIPTION	REV	DATE	BY	APPD	REVISION DESCRIPTION
8	2/16/16	MHR	-	REVISED PRESS VENT TO SHOW TO BLEND CHAMBERS	4	1/9/08	DEK	-	ADDED RTOS.
7	2/8/16	MHR	-	REMOVED RCOS/RTOS & ADDED BIOFILTER W/ NEW STACK	3	2/10/05	DEK	-	ADDED 2 TANKS, REMOVED RCOS.
6	10/28/11	MHR	-	ADDED BLEND CHAMBERS	2	5/30/02	BW	-	ADDED BAGHOUSE 3, RENUMBERED OTHERS
5	10/13/11	MHR	-	ADDED ARCH/NOTCH SYSTEM TO BAGHOUSE 6	1	4/23/02	BW	-	REVISED PRESS VENT BYPASS LINE
					0	7/16/01	BW	-	ISSUED FOR RECORD



APPROVED	SCALE	NTS	MO	DAY
-	DRAWN	B. WICKS	04	23
PROJECT	CHK'D	M. RUTHERFORD	2	16

PROCESS DIAGRAM FOR
WEYERHAEUSER WEST VIRGINIA
SUTTON OSB FACILITY

DRAWING NUMBER: 800-G-7003-A-02

REV E

ATTACHMENT G

PROCESS DESCRIPTION

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

PROCESS DESCRIPTION

PROPOSED MODIFICATION TO OPERATIONS

Weyerhaeuser has plans to upgrade their PWCP MACT HAP control system to incorporate a biological oxidation scrubber, which is commonly referred to as a biofilter. The biofilter will replace the two regenerative catalytic oxidizers as a means of controlling HAPs from the Mill.

The biofilter is basically a very large scrubber which has three packed bed sections. The scrubbing liquid is water with live bacteria that have been designed to digest water soluble hydrocarbons. They are especially efficient at controlling methanol since it is very water soluble.

Contaminated gas is drawn from the process ducting at nearly atmospheric pressure using a centrifugal fan. The exhaust is pushed into the BioOxidation vessel and directed upward to be distributed through a gas absorption section. In this section soluble contaminants are transferred to the liquid phase. Less soluble compounds are treated after passing through the absorption section in the gas phase bio-oxidation section. A mist eliminator removes entrained water droplets from the gas before emitting through the stack to atmosphere.

Contaminated liquid from both the absorption section and gas bio-oxidation section drain by gravity to the liquid phase bio-oxidation section. Aeration and mixing in the liquid bio-oxidation section facilitate degradation of the absorbed contaminants.

Liquid required for sump mixing and spray in the absorbing and gas bio-oxidation sections is circulated using two (2) centrifugal pumps. A portion of flow is directed to an aerator located in the sump using the Aerator Pump. Another fraction of liquid is pumped using the Spray Pump to an automatic backwash filter system where large solids that may clog the spray nozzles are removed. Backwash is returned to the sump or directed to process water system as blowdown according to conductivity and Total Suspended Solids (TSS) measurements. Liquid from the filter is split to the absorbing and gas bio-media sections.

Nutrients are added in the gas bio-oxidation spray line for distribution over the gas bio-media bed. Nutrients trickle through the gas media sections and reach the sump for liquid biomass uptake. Nutrients added to the nutrient tank are supplied in the form of a powder packaged in 1 lb. water soluble bags. A specified number of bags are added monthly, into the nutrient tank which is filled with non-potable water. A slow mechanical agitator mixes the nutrients in water. A heater and embedded thermostat regulate the nutrient tank temperature.

The top section of the packing is for the gas phase biological reaction so it has a relatively small spray mist of water that keeps the packing wetted with activated microbes where it can come into contact with any HAPs that may have escaped the middle absorption packing section. The middle section consist of structured packing and will have a large amount of water trickling through the media to absorb as much of the water soluble pollutants into the aqueous phase as

possible. Although the exact flow rates that will be needed have not yet been established this middle section has the capacity to deliver 6,500 gallons of water a minute. The bottom section of the scrubber has a random packing material made from HDPE which is submerged in the liquid phase. This allows additional residence time for the microbes to reduce the HAP concentrations.

The MACT monitoring requirements for this type of control calls for establishing an average bed temperature. It is envisioned that a number of temperature probes will be located throughout the middle and upper beds to serve as indicators of maintaining the correct temperature environment for the microorganisms to grow. Compliance testing will be conducted within the 180 days of startup to demonstrate compliance and establish operating limits.

ATTACHMENT H

SAFETY DATA SHEETS (SDS)

Note: No changes to the raw material or intermediates result from this modification

Rule 13 / Title V Permit Modification Application

Sutton OSB Mill
Heaters, West Virginia

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

ATTACHMENT I

EMISSION UNITS TABLE

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Attachment I
Emission Units Table
(includes all emission units and air pollution control devices
that will be part of this permit application review, regardless of permitting status)

Emission Unit ID ¹	Emission Point ID ²	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type ³ and Date of Change	Control Device ⁴
3816-00-11	23(1)	Energy Cell No. 1 Auxiliary Natural Gas Burner - Normal Run	1996	29 MMBtu/hr	New Biofilter Proposed for 2016	4110-00-10 Wet ESP No.1
3800-00-10	23(1)	Energy Cell No. 1 Wood Fired Unit Normal Run	1996	175 MMBtu/hr		4800-00-10 Biofilter
3916-00-11	23(1)	Energy Cell No. 2 Auxiliary Natural Gas Burner - Normal Run	1996	29 MMBtu/hr	New Biofilter Proposed for 2016	4120-00-10 Wet ESP No.2
3900-00-10	23(1)	Energy Cell No. 2 Wood Fired Unit Normal Run	1996	175 MMBtu/hr		4800-00-10 Biofilter
3130-00-11	23(1)	Auxiliary Burner - Dryer No. 1	1996	55 MMBtu/hr	New Biofilter Proposed for 2016	4110-00-10 Wet ESP No.1
3230-00-11	23(1)	Auxiliary Burner - Dryer No. 2	1996	55 MMBtu/hr		4800-00-10 Biofilter
3330-00-11	23(1)	Auxiliary Burner - Dryer No. 3	1996	55 MMBtu/hr	New Biofilter Proposed for 2016	4120-00-10 Wet ESP No.2
3430-00-11	23(1)	Auxiliary Burner - Dryer No. 4	1996	55 MMBtu/hr		4800-00-10 Biofilter
4700-00-10	23(1)	OSB Press Vent Exhaust	1996/2008	60.4 tons/hr	New Biofilter Proposed for 2016	4110-00-10 Wet ESP No.1 4120-00-10 Wet ESP No.2 4800-00-10 Biofilter
	23(1)	Note: (1) represents the ability of these emissions to be routed through Emission Point 21 the previous Main Stack during times of biofilter maintenance. This time is limited by Subpart DDDD - Routine Control Device Maintenance Exemption (RCDME).				

¹ For Emission Units (or Sources) use the following numbering system: 1S, 2S, 3S,... or other appropriate designation.

² For Emission Points use the following numbering system: 1E, 2E, 3E, ... or other appropriate designation.

³ New, modification, removal

⁴ For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

EMISSION POINTS DATA SUMMARY SHEET

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data																		
Emission Point ID No. <i>(Must match Emission Units Table & Plot Plan)</i>	Emission Point Type ¹	Emission Unit Vented Through This Point <i>(Must match Emission Units Table & Plot Plan)</i>		Air Pollution Control Device <i>(Must match Emission Units Table & Plot Plan)</i>		Vent Time for Emission Unit <i>(chemical processes only)</i>		All Regulated Pollutants - Chemical Name/CAS ³ <i>(Speciate VOCs & HAPS)</i>	Maximum Potential Uncontrolled Emissions ⁴		Maximum Potential Controlled Emissions ⁵		Emission Form or Phase <i>(At exit conditions, Solid, Liquid or Gas/Vapor)</i>	Est. Method Used ⁶	Emission Concentration ⁷ <i>(ppmv or mg/m⁴)</i>			
		ID No.	Source	ID No.	Device Type	Short Term ²	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr						
23	Vertical	3816-00-11	Aux NG Burner #1 29 MMBtu/hr	4110-00-10 4800-00-10	Wet ESP No. 1 Biofilter			NOx	Please see Attachment N – Supporting Emission Calculations for Details.									
		3800-00-10	Energy Cell #1 175 MMBtu/hr						CO									
		3916-00-11	Aux NG Burner #2 29 MMBtu/hr	4120-00-10 4800-00-10	Wet ESP No. 2 Biofilter					VOC (WPP1)								
		3900-00-10	Energy Cell #2 175 MMBtu/hr								Methanol							
		3130-00-11	Dryer #1 Aux NG Burner 55 MMBtu/hr	4110-00-10 4800-00-10	Wet ESP No. 1 Biofilter							Formaldehyde						
		3230-00-11	Dryer #2 Aux NG Burner 55 MMBtu/hr										HAPs					

	3330-00-11	Dryer #3 Aux NG Burner 55 MMBtu/hr	4120-00-10 4800-00-10	Wet ESP No. 2 Biofilter									
	3430-00-11	Dryer #4 Aux NG Burner 55 MMBtu/hr											
	4700-00-10	OSB Press Vent	4110-00-10 4120-00-10 4800-00-10	Wet ESP No. 1 Wet ESP No. 2 Biofilter									

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- ¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- ² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- ³ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. **DO NOT LIST** H₂, H₂O, N₂, O₂, and Noble Gases.
- ⁴ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁶ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- ⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

Emission Point ID No. <i>(Must match Emission Units Table)</i>	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		Decimal Degree	
		Temp. (°F)	Volumetric Flow ¹ (acfm) <i>at operating conditions</i>	Velocity (fps)	Ground Level <i>(Height above mean sea level)</i>	Stack Height ² <i>(Release height of emissions above ground level)</i>	Lat	Lon
23	11	140	300,000	52.61	1018	91.67	38.762450	-80.653240

¹ Give at operating conditions. Include inerts.
² Release height of emissions above ground level.

ATTACHMENT K

FUGITIVE EMISSIONS DATA SHEET

Note: No Fugitive Emission Changes Result from this Modification

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

ATTACHMENT L

EMISSION UNIT DATA SHEET

Note: No Emission Unit Sheets Affected by this Modification

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

ATTACHMENT M

AIR POLLUTION CONTROL DEVICE DATA SHEET

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Attachment M
Air Pollution Control Device Sheet
(WET COLLECTING SYSTEM-SCRUBBER)

Control Device ID No. (must match Emission Units Table): 4800-00-10

Equipment Information

<p>1. Manufacturer: Process Combustin Corp (PCC)</p> <p>Model No. P.C.C. 1046 - Biological Oxidizer System (Biofilter Scrubber)</p>	<p>2. Method:</p> <table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Packed Bed</td> <td><input type="checkbox"/> Venturi</td> </tr> <tr> <td><input type="checkbox"/> Spray Tower</td> <td><input type="checkbox"/> Cyclone</td> </tr> <tr> <td><input type="checkbox"/> Mechanical</td> <td><input type="checkbox"/> Orifice</td> </tr> <tr> <td colspan="2"><input checked="" type="checkbox"/> Other, specify</td> </tr> </table>	<input type="checkbox"/> Packed Bed	<input type="checkbox"/> Venturi	<input type="checkbox"/> Spray Tower	<input type="checkbox"/> Cyclone	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Orifice	<input checked="" type="checkbox"/> Other, specify	
<input type="checkbox"/> Packed Bed	<input type="checkbox"/> Venturi								
<input type="checkbox"/> Spray Tower	<input type="checkbox"/> Cyclone								
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Orifice								
<input checked="" type="checkbox"/> Other, specify									
<p>3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.</p>									
<p>4. Provide a scale diagram of the scrubber showing internal construction. Please include packing type and size, spray configurations, baffle plates, and mist eliminators.</p>									
<p>5. What type of liquid entrainment eliminators or system will be used? Submit a schematic diagram showing thickness, mesh, and material of construction.</p>									
<p>6. Describe the scrubber's construction material: The scrubber shell is constructed of carbon steel. It will have three packed bed sections, 1 for the gas phase, 1 for the absorption section and one for the sump liquid section. The top gas section will utilize HDPE packing 6 ft thick. The middle absorption section will be 10 ft and consist of structured packing media. Bottom same as top, but 20ft thick.</p>									
<p>7. What will be the power requirements of the collector?</p> <p align="center">Fan 1500 HP Inlet scrubbing liquid pump: 500 HP</p>									
<p>8. What type of fan(s) will be used?</p> <p>Type of fan blade: reverse pitch Number of blades: Diameter of blade: in.</p> <p>Also supply a fan curve for each fan to be used.</p>									
<p>9. Estimated gas pressure drop at maximum flow rate: 8 inches H₂O</p>									

Scrubbing Liquor Characteristics

<p>10. Scrubbing Liquor</p> <table style="width:100%; border: none;"> <thead> <tr> <th style="width:50%; text-align: center;">Composition</th> <th style="width:50%; text-align: center;">Weight %</th> </tr> </thead> <tbody> <tr> <td>1 Water</td> <td></td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>4</td> <td></td> </tr> </tbody> </table>	Composition	Weight %	1 Water		2		3		4		<p>11. Scrubbing liquor losses (evaporation, etc.): gal/1000 ACF gas</p> <p>12. Liquor pressure to scrubber: PSIA</p> <p>13. Pressure drop through scrubber: 8 in. H₂O</p>
Composition	Weight %										
1 Water											
2											
3											
4											
<p>14. Source of liquor (explain):</p>	<p>15. Liquor flow rates to scrubber:</p> <p align="right">Design maximum: 7000 gal/min</p> <p align="right">Average expected: gal/min</p>										
<p>16. Describe system to be used to supply liquor to collector: Two redundant 500 hp main pumps, spray nozzels to be determined.</p>											
<p>17. Give the expected solids content of the liquor:</p>											

18. If the liquor is to be recirculated, describe any treatment performed:
 Within the Biological Nutrient tank additives will be measured and add to the top of the biofilter using a 50 gal/d pump.

 The conductivity and total desolved solids will be measured periodically to determine the appropriate rate of blowdown and makeup water to be added.

19. Data for Venturi Scrubber: Throat Dimensions: (Specify Units) Throat Velocity: ft/sec	20. Data for Packed Towers: Type of Packing: Various See Description Superficial Gas Velocity through Bed:
---	--

Gas Stream Characteristics

21. Gas flow into the collector: 300,000 ACF @ 140 °F and 14.7 PSIA	22. Gas stream temperature: Inlet: 140 °F Outlet: 130 °F
---	--

23. Gas flow rate: Design Maximum: 370,000 ACFM Average Expected: ACFM	24. Particulate Grain Loading in grains/scf: Inlet: Outlet:
--	---

25. Emission rate of each pollutant (specify) into and out of collector:					
Pollutant	IN		OUT		Guaranteed Minimum Collection Efficiency
	lb/hr	grains/acf	lb/hr	grains/acf	
A Methanol	10.49		1.05		
B Formaldehyde	4.55		4.55		
C VOC(WPP1)	59.09		26.75		
D HAPs	26.45		17.01		
E					

26. Type of pollutant(s) controlled: SO_x Odor
 Particulate (type): Other: VOC/HAP

27. By what method were the uncontrolled emissions calculated? Material Balance Stack Test
 Pilot Test Other:

28. Dimensions of stack: Height 91.67 ft. Diameter 11 ft

29. Supply an equilibrium curve and/or solubility data (at various temperatures) for the proposed system.

30. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 100 percent of design rating of collector.

Particulate Distribution

31. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		
32. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A		
33. Describe the collection material disposal system: Blowdown water will be sent to the plant's water treatment system which services the Wet ESP.		
34. Have you included Wet Collecting (Scrubber) Control Device in the Emissions Points Data Summary Sheet?		

35. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

<p>MONITORING: In accordance with MACT Subpart DDDD the biofilter will monitor the average bed temperature and maintain it within the range demonstrated during the initial performance test.</p>	<p>RECORDKEEPING: Records of the bed temperature will be maintained. Exceedances of the temperature range will be documented as operating limit deviations. Additionally, other periods of time where less than 75% of the days data was obtained will also be documented as a monitoring deviation.</p>
--	---

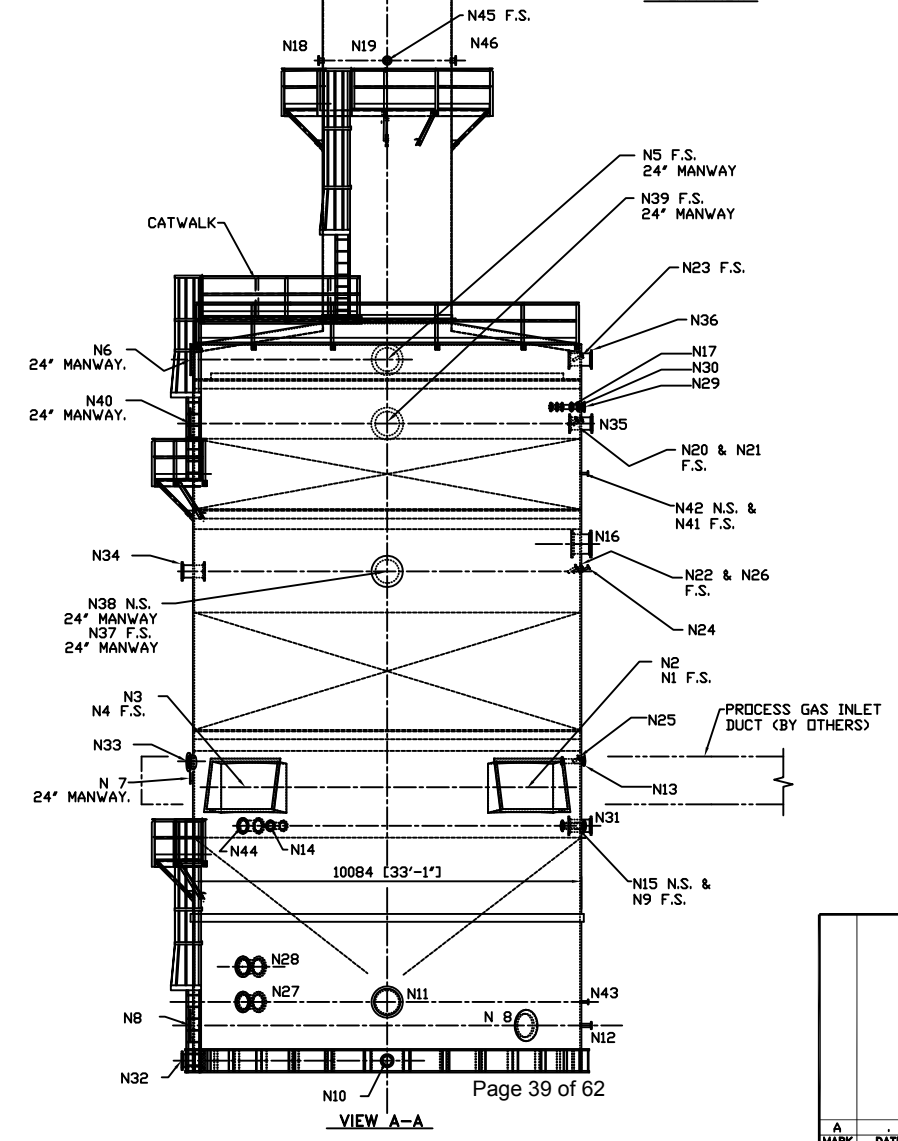
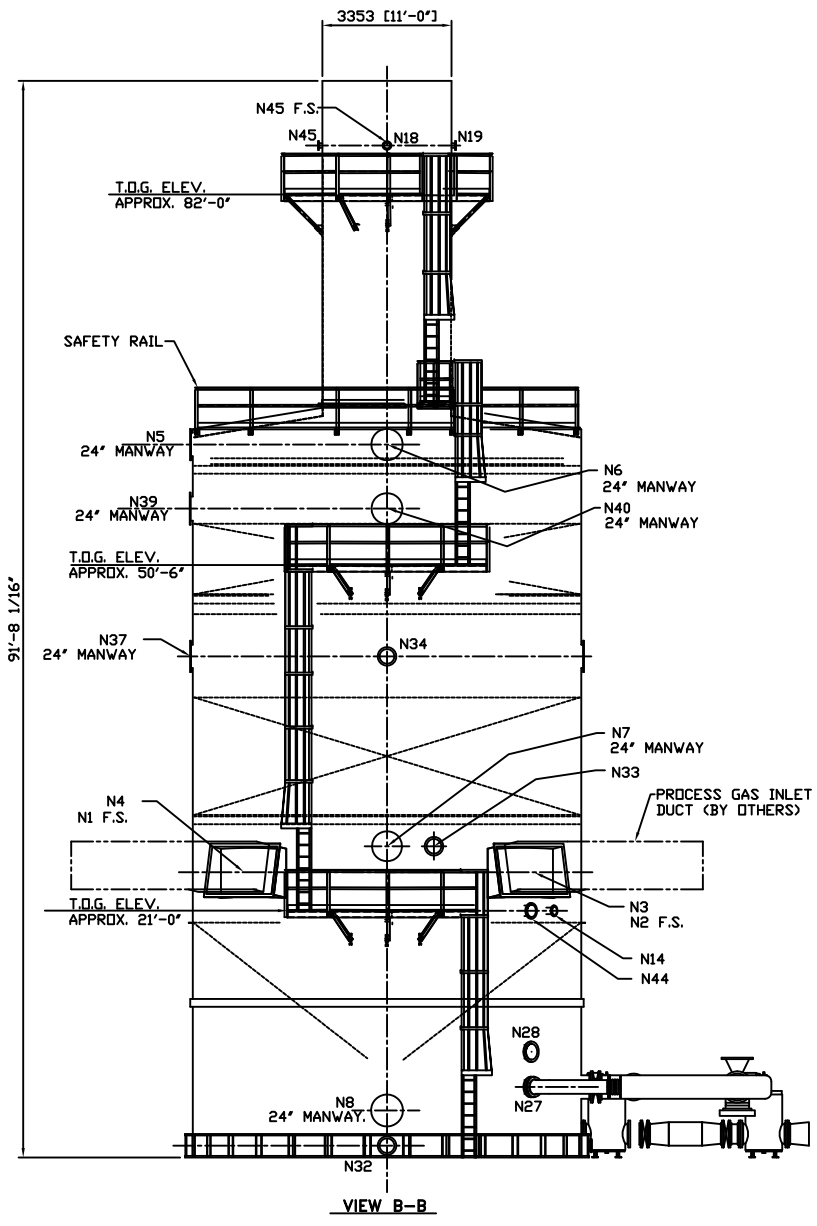
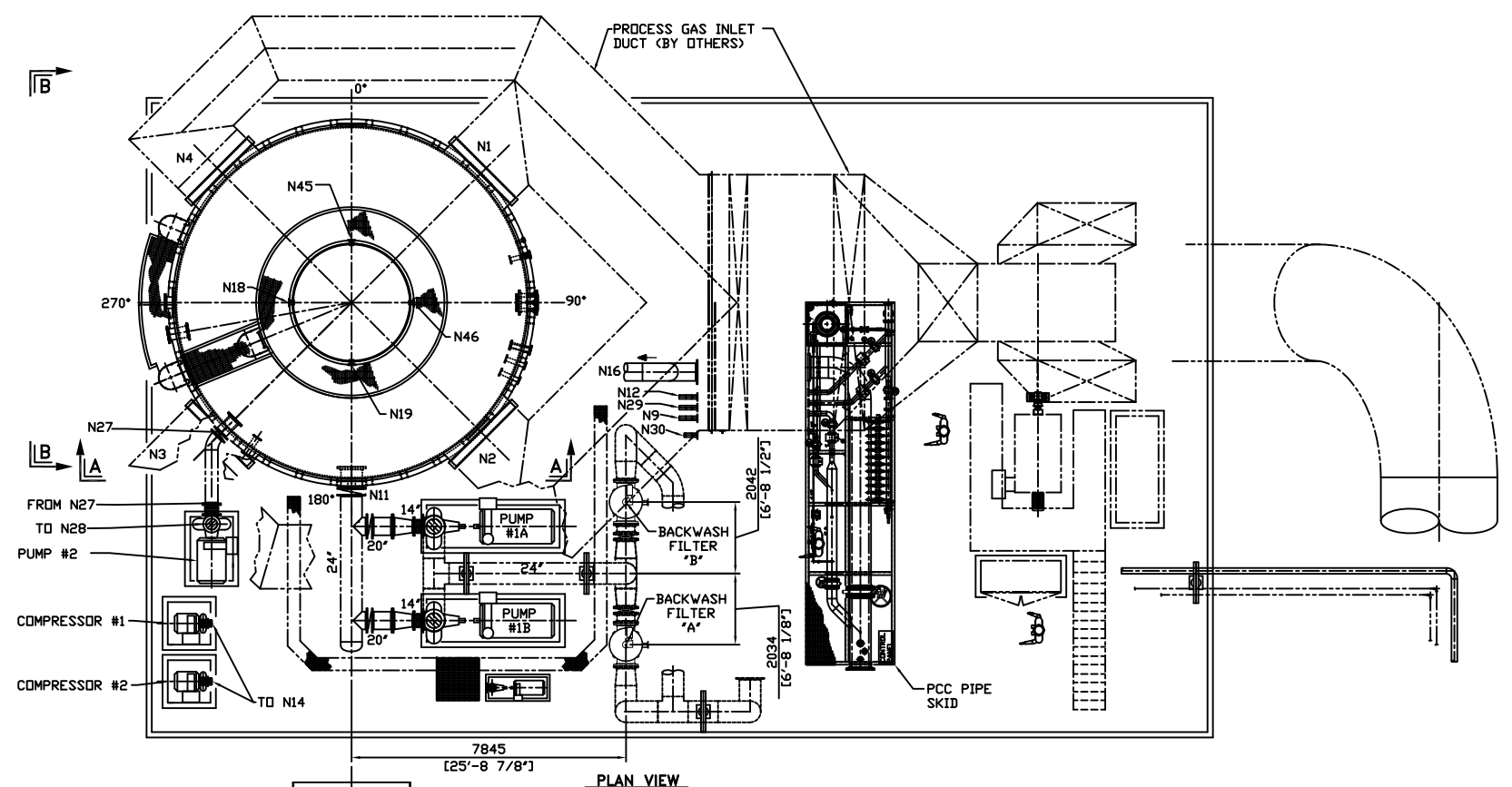
<p>REPORTING: All deviations of the monitoring range will be reported</p>	<p>TESTING: Initial testing shall be conducted to demonstrate compliance and establish operating limits within 180 days of starting up the new control device.</p>
--	---

<p>MONITORING:</p>	<p>Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.</p>
<p>RECORDKEEPING:</p>	<p>Please describe the proposed recordkeeping that will accompany the monitoring.</p>
<p>REPORTING:</p>	<p>Please describe any proposed emissions testing for this process equipment on air pollution control device.</p>
<p>TESTING:</p>	<p>Please describe any proposed emissions testing for this process equipment on air pollution control device.</p>

36. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
NA - Capture system is regulated by PWCP MACT around the press but in this case goes beyond the biofilter manufacturer's gaurantee.

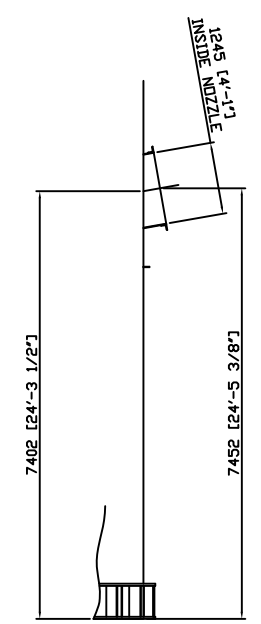
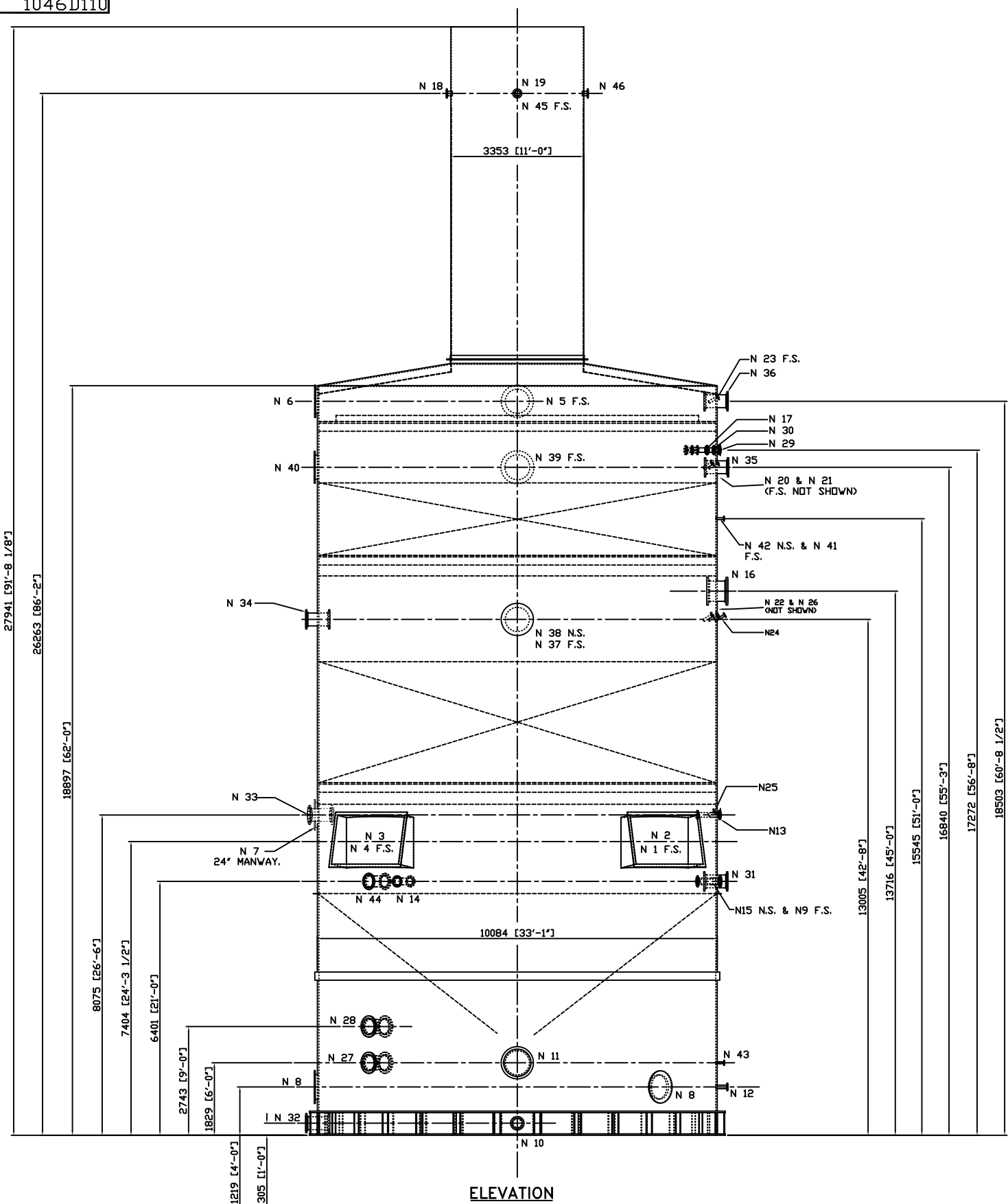
37. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
90 % for Methanol

38. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
TBD



- REFERENCE DRAWINGS:**
- 1046D110 BIOLOGICAL OXIDIZER - NOZZLE SCHEDULE
 - 1046D111 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D112 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D113 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D200 P&I DIAGRAM
 - 1046D201 P&I DIAGRAM

P.C.C. PROJECT NO. 1046		PROCESS COMBUSTION CORPORATION	
5460 Horning Road Pittsburgh, PA 15236		Phone: 412.655.0955 www.pcc-sterling.com	
<p>SHOP NOTES:</p> <p>FABRICATION TOLERANCES - SEE P.C.C. SPECIFICATIONS ALL MACHINING TOLERANCE DIMENSIONS ARE DECIMAL ±0.005" UNLESS OTHERWISE NOTED. FRACTIONAL ± 1/64" UNLESS OTHERWISE NOTED.</p> <p>- CONFIDENTIAL - THIS DRAWING IS SENT TO YOU SUBJECT TO RETURN UPON DEMAND, AND WITH THE UNDERSTANDING THAT IT IS NOT TO BE REPRODUCED, COPIED, OR USED, DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO P.C.C. INTERESTS.</p>			
DATE 03-24-16		APP'D 04/06/16	
SCALE 1/8"=1'-0"		CKD.	
DRAWN TEC		1046D100 A	



N1, N2, N3 & N4 ELEVATION

NOZZLE SCHEDULE

MARK	QTY.	SERVICE	DESCRIPTION	ELEVATION	ORIENTATION (SEE SECTION)
N 1	1	PROCESS GAS INLET	RECTANGULAR DUCT ENTRY 49' INS. HEIGHT X 94' INSIDE WIDTH < VESSEL OPENING 56 1/2' H X 94' WIDE	24'-3 1/2'	45°
N 2	1	PROCESS GAS INLET	RECTANGULAR DUCT ENTRY 49' INS. HEIGHT X 94' INSIDE WIDTH < VESSEL OPENING 56 1/2' H X 94' WIDE	24'-3 1/2'	135°
N 3	1	PROCESS GAS INLET	RECTANGULAR DUCT ENTRY 49' INS. HEIGHT X 94' INSIDE WIDTH < VESSEL OPENING 56 1/2' H X 94' WIDE	24'-3 1/2'	225°
N 4	1	PROCESS GAS INLET	RECTANGULAR DUCT ENTRY 49' INS. HEIGHT X 94' INSIDE WIDTH < VESSEL OPENING 56 1/2' H X 94' WIDE	24'-3 1/2'	315°
N 5	1	MIST ELIMINATOR MANWAY 1	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	58'-8"	0°
N 6	1	MIST ELIMINATOR MANWAY 2	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	58'-8"	270°
N 7	1	LIQUID SUMP UPPER MANWAY	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	21'-0"	270°
N 8	2	LIQUID SUMP LOWER MANWAY	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	4'-0"	135° & 270°
*N 9	1	SUMP MAKE UP WATER	4' ANSI 150# FLANGE	21'-0"	75°
N 10	1	BLOWDOWN	8' ANSI 150# FLANGE	1'-0"	180°
*N 11	1	MAIN PUMP DRAW	24' ANSI 150# FLANGE	6'-0"	180°
N 12	1	LEVEL TRANSMITTER CONNECTION	3' ANSI 150# FLANGE	4'-0"	90°
*N 13	1	TEST CONNECTION	4' ANSI 150# FLANGE	26'-6"	105°
*N 14	1	COMPRESSED AIR INJECTION	6' ANSI 150# FLANGE	21'-0"	215°
*N 15	1	SITE SUMP PUMP-OUT LINE	6' ANSI 150# FLANGE	21'-0"	105°
*N 16	1	ABSORBER SPRAY CONNECTION	20' ANSI 150# FLANGE (INSIDE & OUTSIDE)	45'-0"	90°
N 17	1	BIO-BED SPRAY CONNECTION	4' ANSI 150# FLANGE	56'-2"	115°
N 18	1	STACK TEST PORT 1	4' ANSI 150# FLANGE	86'-2"	270°
N 19	1	STACK TEST PORT 2	4' ANSI 150# FLANGE	86'-2"	180°
N 20	1	BIO-BED DP TAP 2	2' ANSI 150# FLANGE	55'-3"	70°
N 21	1	MIST ELIMINATOR DP TAP 1	2' ANSI 150# FLANGE	55'-3"	75°
N 22	1	BIO-BED DP TAP 1	2' ANSI 150# FLANGE	42'-8"	70°
N 23	1	MIST ELIMINATOR DP TAP 2	2' ANSI 150# FLANGE	58'-8"	75°
N 24	1	THERMOCOUPLE TAP	1-1/2' ANSI 150# FLANGE	42'-8"	90°
N 25	1	ABSORBER DP TAP 1	2' ANSI 150# FLANGE	26'-6"	75°
N 26	1	ABSORBER DP TAP 2	2' ANSI 150# FLANGE	42'-8"	75°
*N 27	1	SECONDARY PUMP DRAW (AERATOR SUCTION)	14' ANSI 150# FLANGE	6'-0"	225°
*N 28	1	RECIRCULATION LOOP CONNECTION	14' ANSI 150# FLANGE	9'-0"	225°
*N 29	1	SLOUGHING CONNECTION	4' ANSI 150# FLANGE	56'-2"	105°
*N 30	1	MIST ELIMINATOR UNDERSIDE SPRAY	4' ANSI 150# FLANGE	56'-2"	110°
*N 31	1	OVERFLOW DRAIN	12' ANSI 150# FLANGE	21'-0"	90°
*N 32	1	LIQUID PHASE BOTTOM SPARE	12' ANSI 150# FLANGE (INSIDE & OUTSIDE)	1'-0"	270°
*N 33	1	LIQUID PHASE UPPER SPARE	12' ANSI 150# FLANGE	26'-6"	260°
*N 34	1	ABSORBER TOP SIDE SPARE	12' ANSI 150# FLANGE	42'-8"	270°
*N 35	1	BIO-BED TOPSIDE SPARE	12' ANSI 150# FLANGE	55'-3"	90°
*N 36	1	MIST ELIMINATOR TOP SPARE	12' ANSI 150# FLANGE	58'-8"	90°
N 37	1	ABSORBER BED MANWAY 1	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	42'-8"	0°
N 38	1	ABSORBER BED MANWAY 2	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	42'-8"	180°
N 39	1	BIO-BED MANWAY 1	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	55'-3"	0°
N 40	1	BIO-BED MANWAY 2	24' DIA PLATE FLANGE WITH ANSI DRILLING PATTERN	55'-3"	270°
N 41	1	BIO-BED MEDIA TEMP	1-1/2' ANSI 150# FLANGE	51'-0"	85°
N 42	1	BIO-BED MEDIA TEMP	1-1/2' ANSI 150# FLANGE	51'-0"	90°
N 43	1	SUMP LIQUID TEMP	1-1/2' ANSI 150# FLANGE	6'-0"	90°
N 44	1	AERATION NOZZLE CLEARING LOOP	10' ANSI 150# FLANGE	21'-0"	225°
N 45	1	STACK TEST PORT 3	4' ANSI 150# FLANGE	86'-2"	0°
N 46	1	STACK TEST PORT 4	4' ANSI 150# FLANGE	86'-2"	90°

* DENOTES INTERNAL FLANGED CONNECTION -SEE ELEVATION SECTIONS

- REFERENCE DRAWINGS:
- 1046D100 BIOLOGICAL OXIDIZER - GENERAL ARANGEMENT
 - 1046D111 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D112 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D113 BIOLOGICAL OXIDIZER - NOZZLE LOCATIONS
 - 1046D200 P&I DIAGRAM
 - 1046D201 P&I DIAGRAM

WORK THIS DRAWING WITH DWG. 1046D110

P.C.C. PROJECT NO. 1046		OXIDATION TECHNOLOGIES	
SHOP NOTES: FABRICATION TOLERANCES - SEE P.C.C. SPECIFICATIONS ALL MACHINING TOLERANCE DIMENSIONS ARE DECIMAL ± 0.005" UNLESS OTHERWISE NOTED. FRACTIONAL ± 1/64"		5460 Homing Road Pittsburgh, PA 15236 Phone: 412.655.0955. www.pcc-sterling.com	
- CONFIDENTIAL -		BIOLOGICAL OXIDIZER SYSTEM NOZZLE SCHEDULE WEYERHAEUSER	
THIS DRAWING IS SENT TO YOU SUBJECT TO RETURN UPON DEMAND, AND WITH THE UNDERSTANDING THAT IT IS NOT TO BE REPRODUCED, COPIED, OR USED, DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO P.C.C. INTERESTS.		DATE: 03-04-16 SCALE: 3/16"=1'-0" DRAWN: SDG	APVD: 04/01/2016 CHKD: 1046D110 REV. B

ATTACHMENT N

SUPPORTING EMISSIONS CALCULATIONS

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Table A-1: Change in Emissions of Regulated Compounds Resulting from Biofilter Modificaiton

Description of Emission Totals Compared	Regulated Compounds								HAPs (tpy)	Methanol (tpy)
	CO (tpy)	NO _x (tpy)	TSP (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO ₂ (tpy)	VOC (tpy)	Lead (tpy)		
Potential Emissions (tpy) with Biofilter	99.9	224.1	95.4	95.4	87.8	17.9	149.6	0.03	39.8	3.1
Previous Emissions (tpy) with RCO	106.0	228.9	91.6	91.6	NA	17.0	88.2	0.03	30.0	9.21
Overall Change in Emission	-6.08	-4.81	3.86	3.86	0.00	0.93	61.40	0.00	9.85	-6.06

Note: Increase in production was a reflection of increasing the Press Annual Average hourly production estimate from producing 80.25 MSF/hr of 3/8" boards to 86 MSF/hr (3/8")
 The increase to the Mills annual production rate is the result of successful maintenance programs, which has resulted in less downtime. The maximum hourly production capacity of permitting equipment has not changed.

Table B-1: Facility-Wide Potential Emission Rates of Regulated Compounds

Emission Point ID	Emission Source ID	Regulated Compounds								HAPs (tpy)
		CO (tpy)	NO _x (tpy)	TSP (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO ₂ (tpy)	VOC (tpy)	Lead (tpy)	
1	Flaking and screening system	--	--	0.04	0.04	0.02	--	0.05	--	--
3	Dry flake area	--	--	1.45	1.45	0.65	--	3.57	--	--
4	Mat trim system	--	--	2.41	2.41	1.08	--	3.59	--	--
5	Rough trim system	--	--	2.51	2.51	1.13	--	3.74	--	--
6	Tongue and Groove and sawing system	--	--	2.72	2.72	1.22	--	4.02	--	--
7	Sander dust system	--	--	0.96	0.96	0.43	--	1.72	--	--
9	Dry waste system	--	--	3.74	3.74	1.69	--	5.58	--	--
10 & 11	EC-1 idle run multiclone & EC-2 idle run multiclone ²	8.40	11.20	9.52	9.52	7.28	1.40	12.75	0.013	3.79
23	Main Stack	96.3	221.6	79.4	79.4	79.4	17.9	117.1	0.03	32.3
21	RCDME (Biofilter Offline)	--	--	--	--	--	--	4.36	--	1.78
24	Press system bypass	2.11	--	0.34	0.34	0.34	--	5.62	--	5.69
27	Emergency generator	0.21	0.91	0.03	0.02	0.02	0.005	0.02	--	3.0E-05
31	Liquid phenolic resin tank 1	--	--	--	--	--	--	0.002	--	5.0E-06
32	Liquid phenolic resin tank 2	--	--	--	--	--	--	0.002	--	5.0E-06
33	Liquid phenolic resin tank 3	--	--	--	--	--	--	0.002	--	5.0E-06
34	Liquid phenolic resin tank 4	--	--	--	--	--	--	0.002	--	5.0E-06
35	MDI Tank 1	--	--	--	--	--	--	2.0E-07	--	2.0E-07
36	MDI Tank 2	--	--	--	--	--	--	2.0E-07	--	2.0E-07
37	Wax Tank 1	--	--	--	--	--	--	0.01	--	0.01
38	Wax Tank 2	--	--	--	--	--	--	0.01	--	0.01
39	Wax/resin tank heater	1.29	1.54	0.12	0.12	0.12	0.01	0.10	0.00001	0.0012
40 & 41	Paint Booth 1	--	--	0.57	0.57	0.57	--	--	--	--
42 & 43	Paint Booth 2	--	--	0.57	0.57	0.57	--	--	--	--
44 & 45	Paint Booth 3	--	--	0.57	0.57	0.57	--	--	--	--
46	Liquid phenolic resin tank 5	--	--	--	--	--	--	0.002	--	5.0E-06
47	Liquid phenolic resin tank 6	--	--	--	--	--	--	0.002	--	5.0E-06
Total Potential Emissions Estimated (tpy)		99.9	224.1	95.4	95.4	87.8	17.9	149.6	0.03	39.8
Title V Allowable Emissions Proposed (tpy)		229.0	249.0	95.4	95.4	87.8	17.9	249.0	0.03	39.8

2. Idle Run emissions are shown for completeness, but are not included in the Facility-wide totals.

PSD Analysis for Requesting Title V Allowable Limits for the Facility

Estimated NOx Emissions from Main Stack	
#23:	221.6 tpy
Other:	2.45 tpy
NOx limit to avoid PSD:	249 tpy
Total NOx allowed from Main Stack:	246.55 tpy
PSD Compliance Margin	24.91 tpy

Estimated VOC Emissions from 1-9, 21, & 23:	
	143.8 tpy
Other:	5.8 tpy
VOC limit to avoid PSD:	249 tpy
Total VOC allowed 1-9, 21, & 23:	243.2 tpy
PSD Compliance Margin	99.44 tpy

Estimated CO Emissions from Main Stack	
#23:	96.3 tpy
Other:	3.6 tpy
CO limit to avoid PSD:	229 tpy
Total CO allowed from Main Stack:	225.4 tpy
PSD Compliance Margin	129.1 tpy

(Sutton requested 249 tpy. WVDAQ counter-offered with 229 tpy.)
Note: the DAQ limit of 229 was est. during the last Title V Renewal

Table B-11: Main Stack

Emission Unit: OSB Press (ID No. 4700-00-10);
Energy Cell 1 (ID Nos. 3800-00-10 and 3816-00-11);
Energy Cell 2 (ID Nos. 3900-00-10 and 3916-00-11); and
Dryer Nos. 1, 2, 3, and 4 (ID Nos. 3130-00-11, 3230-00-11, 3330-00-11, and 3430-00-11)
Control Device: Wet Electrostatic Precipitator Nos. 1 and 2 (ID No. 4110-00-10 and 4120-00-10)
Emission Point: ID No. 23

Main Stack (ID No. 23) Potential Emissions Summary:

Criteria Compound (ton/yr)	Energy Cells - Wood Combustion	Wet ESP Stack Test	RCO Burners Removed	Main Stack (ID No. 23) Uncontrolled Emission Rate ¹
CO ²	-	96.31	0.00	96.3 tpy
NO _x	-	221.64	0.00	221.6 tpy
PM ⁵	-	79.38	0.00	79.4 tpy
PM-10 ⁵	-	79.38	0.00	79.4 tpy
PM-2.5 ⁵	-	79.38	-	79.4 tpy
SO ₂	-	17.91	0.00	17.9 tpy
Lead	-	0.03	0.00	0.03 tpy
VOC (as propane)	-	113.08	0.00	113.1 tpy
VOC (as WPP1)	-	145.49	-	145.5 tpy
				Controlled Emission Rate ¹
VOC (as propane)	-	104.63		104.6 tpy
VOC (as WPP1)	-	117.14	-	117.1 tpy

Minimum RCO Control Efficiency:⁴ 0.00%

Minimum Biofilter Control For Methanol 90.00%

Main Stack (ID No. 23) Potential Emissions Summary (continued):

Hazardous Air Pollutant	Energy Cells - Wood Combustion (lb/hr)	Wet ESP Stack Test (lb/hr)	RCO Burners (lb/hr)	Main Stack (ID No. 21) Uncontrolled Emission Rate ¹		Main Stack (ID No. 21) Controlled Emission Rate ¹	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)
Acetaldehyde	-	2.40	-	2.40	4.89	2.40	4.89
Acetophenone	1.37E-03	-	-	1.37E-03	6.01E-03	1.37E-03	6.01E-03
Acrolein	-	0.93	-	0.93	1.21	0.93	1.21
Antimony	5.56E-04	-	-	5.56E-04	2.43E-03	5.56E-04	2.43E-03
Arsenic	-	0.00	0.00	9.95E-04	2.33E-03	9.95E-04	2.33E-03
Benzene	-	0.07	0.00	6.53E-02	1.12E-01	6.53E-02	1.12E-01
Beryllium	-	0.00	0.00	3.46E-05	5.85E-05	3.46E-05	5.85E-05
Bis(2-ethylhexyl-phthalate)	1.65E-05	-	-	1.65E-05	7.21E-05	1.65E-05	7.21E-05
Cadmium	-	0.00	0.00	2.28E-03	4.53E-03	2.28E-03	4.53E-03
Carbon disulfide	4.82E-02	-	-	4.82E-02	2.11E-01	4.82E-02	2.11E-01
Carbon tetrachloride	1.19E-04	-	-	1.19E-04	5.19E-04	1.19E-04	5.19E-04
Chlorine	-	0.20	-	1.99E-01	3.80E-01	1.99E-01	3.80E-01
Chlorobenzene	1.16E-02	-	-	1.16E-02	5.06E-02	1.16E-02	5.06E-02
Chloroform	1.74E-02	-	-	1.74E-02	7.63E-02	1.74E-02	7.63E-02
Chromium	-	0.01	0.00	1.10E-02	1.73E-02	1.10E-02	1.73E-02
Cobalt	1.11E-02	-	0.00	1.11E-02	4.87E-02	1.11E-02	4.87E-02
Cumene	-	4.74	-	4.74	5.67	4.74	5.67
Dinitrophenol, 2,4-	6.30E-05	-	-	6.30E-05	2.76E-04	6.30E-05	2.76E-04
Dioxin (2,3,7,8-TCDD)	3.27E-10	-	-	3.27E-10	1.43E-09	3.27E-10	1.43E-09
Ethylbenzene	1.45E-03	-	-	1.45E-03	6.33E-03	1.45E-03	6.33E-03
Formaldehyde ³	-	4.55	0.00	4.56	10.32	4.56	10.32
Hexane	-	0.26	0.00	2.58E-01	7.31E-01	2.58E-01	7.31E-01
Hydrogen chloride	-	0.45	-	4.53E-01	1.06E+00	4.53E-01	1.06E+00
Lead	-	0.01	0.00	0.01	0.03	0.01	0.03

Table B-11: Main Stack

Emission Unit: OSB Press (ID No. 4700-00-10);
Energy Cell 1 (ID Nos. 3800-00-10 and 3816-00-11);
Energy Cell 2 (ID Nos. 3900-00-10 and 3916-00-11); and
Dryer Nos. 1, 2, 3, and 4 (ID Nos. 3130-00-11, 3230-00-11, 3330-00-11, and 3430-00-11)
Control Device: Wet Electrostatic Precipitator Nos. 1 and 2 (ID No. 4110-00-10 and 4120-00-10)
Emission Point: ID No. 23

Manganese	-	0.18	0.00	1.83E-01	1.78E-01	1.83E-01	1.78E-01
Mercury	1.33E-02	-	0.00	1.34E-02	5.85E-02	1.34E-02	5.85E-02
Methanol	-	10.49	-	10.49	31.49	1.05	3.15
Methyl chloride	3.63E-02	-	-	3.63E-02	1.59E-01	3.63E-02	1.59E-01
Methyl chloroform	1.09E-02	-	-	1.09E-02	4.75E-02	1.09E-02	4.75E-02
Methyl ethyl ketone	4.45E-03	-	-	4.45E-03	1.95E-02	4.45E-03	1.95E-02
Methyl isobutyl ketone	-	0.14	-	1.38E-01	2.83E-01	1.38E-01	2.83E-01
Methylene chloride (Dichloromethane)	-	0.14	-	1.44E-01	2.16E-01	1.44E-01	2.16E-01
Methylene diphenyl diisocyanate (MDI)	-	0.02	-	2.36E-02	2.70E-02	2.36E-02	2.70E-02
Naphthalene	-	0.00	0.00	4.01E-05	1.76E-04	4.01E-05	1.76E-04
Nickel	-	0.00	0.00	4.16E-03	7.25E-03	4.16E-03	7.25E-03
Nitrophenol, 4-	3.85E-05	-	-	3.85E-05	1.69E-04	3.85E-05	1.69E-04
Pentachlorophenol	1.79E-05	-	-	1.79E-05	7.82E-05	1.79E-05	7.82E-05
Phenol	-	0.00	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00
POM	-	0.00	0.00	2.20E-05	9.65E-05	2.20E-05	9.65E-05
Propionaldehyde	-	1.00	-	1.00	0.83	1.00	0.83
Selenium	4.15E-04	-	0.00	4.16E-04	1.82E-03	4.16E-04	1.82E-03
Styrene	5.56E-03	-	-	5.56E-03	2.43E-02	5.56E-03	2.43E-02
Tetrachloroethylene	6.30E-02	-	-	6.30E-02	2.76E-01	6.30E-02	2.76E-01

Main Stack (ID No. 23) Potential Emissions Summary (continued):

Hazardous Air Pollutant	Energy Cells - Wood Combustion (lb/hr)	Wet ESP Stack Test (lb/hr)	RCO Burners (lb/hr)	Main Stack (ID No. 21)		Main Stack (ID No. 21)	
				Uncontrolled Emission Rate ¹ (lb/hr)	(tpy)	Controlled Emission Rate ¹ (lb/hr)	(tpy)
Toluene	-	0.16	0.00	1.62E-01	2.37E-01	1.62E-01	2.37E-01
Trichloroethylene	2.82E-03	-	-	2.82E-03	1.23E-02	2.82E-03	1.23E-02
Trichlorophenol, 2,4,6-	7.70E-06	-	-	7.70E-06	3.37E-05	7.70E-06	3.37E-05
Vinyl chloride	6.30E-03	-	-	6.30E-03	2.76E-02	6.30E-03	2.76E-02
Xylenes	-	0.45	-	4.48E-01	1.96E+00	4.48E-01	1.96E+00
Total MACT HAP	-	19.37	0.00	19.37	48.74	9.93	20.40
Total HAP	0.23	26.21	0.00	26.45	60.69	17.01	32.35

References:

% HAP Control 53.300713

1. Uncontrolled values are without Biofilter control; controlled values include the minimum Methanol control efficiency.
2. Due to uncertainty surrounding CO emissions from wood fired fuel cells and to ensure the mill remains a PSD minor source, the mill requests the CO facility-wide emissions limit to be set at 229 tpy, which allows a Main Stack (EP ID 23) permit limit of 225.4 tpy.
3. As shown historically at this mill, formaldehyde emissions vary in some scenarios; therefore, assume no control of formaldehyde.
4. RCO Control has been zeroed out since it has been replaced by a biofilter
5. PM values are after going thru controls (Multiclones, Cyclonic Separators & WESPs)

Table B-12: Wet ESP Stack Test

Emission Unit: OSB Press (ID No. 4700-00-10);
Energy Cell 1 (ID Nos. 3800-00-10 and 3816-00-11);
Energy Cell 2 (ID Nos. 3900-00-10 and 3916-00-11); and
Dryer Nos. 1, 2, 3, and 4 (ID Nos. 3130-00-11, 3230-00-11, 3330-00-11, and 3430-00-11)
Control Device: Wet Electrostatic Precipitator Nos. 1 and 2 (ID No. 4110-00-10 and 4120-00-10)
Biofilter (ID Nos. 4800-00-10)
Emission Point: ID No. 23

Potential Process Throughput:

Wood Flakes Dried: 56 ODT/hr
Average Annual OSB Production: 86 MSF/hr (3/8 inch)
Maximum Hourly OSB Production: 94 MSF/hr (3/8 inch)
Operational Hours: 8,760 hr/yr
Particulate Control: 80.0%

Potential Emissions Summary: ¹

Criteria Compounds	Hourly Emission Factor	Reference	Annual Emission Factor	Reference	Uncontrolled Emissions	
					(lb/hr)	(ton/yr)
CO	0.433 lb/MSF	2	0.256 lb/MSF	3	40.66	96.3
NO _x	0.939 lb/MSF	2	0.588 lb/MSF	3	88.23	221.6
PM	0.369 lb/MSF	2	0.211 lb/MSF	3	34.68	79.4
PM-10	0.369 lb/MSF	2	0.211 lb/MSF	3	34.68	79.4
PM-2.5	0.369 lb/MSF	3	0.211 lb/MSF	3	34.68	79.4
SO ₂	0.130 lb/MSF	2	0.048 lb/MSF	3	12.26	17.9
VOC (as propane)	0.502 lb/MSF	2, 4	0.300 lb/MSF	3	47.17	113.1
VOC (as WPP1)	Uncontrolled VOCs as WPP1 - calculations below table			7, 8	59.09	145.5
					Controlled VOC Emissions	
VOC (as propane)	- lb/MSF	-	0.278 lb/MSF	7	23.89	104.6
VOC (as WPP1)	- lb/MSF	-	0.311 lb/MSF	7, 8	26.75	117.1

Hazardous Air Pollutant	Hourly Emission Factor	Reference	Annual Emission Factor	Reference	Uncontrolled Emissions	
					(lb/hr)	(ton/yr)
Acetaldehyde	2.55E-02 lb/MSF	2	1.30E-02 lb/MSF	3	2.401	4.892
Acrolein	9.88E-03 lb/MSF	2	3.21E-03 lb/MSF	3	0.929	1.210
Arsenic	1.05E-05 lb/MSF	2	6.09E-06 lb/MSF	3	0.001	0.002
Benzene	6.93E-04 lb/MSF	2	2.97E-04 lb/MSF	3	0.065	0.112
Beryllium	3.63E-07 lb/MSF	2	1.49E-07 lb/MSF	3	3.41E-05	5.62E-05
Cadmium	2.37E-05 lb/MSF	2	1.15E-05 lb/MSF	3	0.002	0.004
Chlorine	2.11E-03 lb/MSF	2	1.01E-03 lb/MSF	3	0.199	0.380
Chromium	1.16E-04 lb/MSF	2	4.52E-05 lb/MSF	3	0.011	0.017
Cumene	5.04E-02 lb/MSF	2	1.50E-02 lb/MSF	3	4.739	5.668
Dichloromethane	1.54E-03 lb/MSF	2	5.73E-04 lb/MSF	3	0.144	0.216
Formaldehyde	4.84E-02 lb/MSF	2	2.73E-02 lb/MSF	3	4.552	10.302
Hexane	2.74E-03 lb/MSF	2	1.00E-03 lb/MSF	3	0.258	0.378
Hydrogen Chloride	4.82E-03 lb/MSF	2	2.82E-03 lb/MSF	3	0.453	1.063
Lead	1.24E-04 lb/MSF	2	7.90E-05 lb/MSF	3	0.012	0.030
Manganese	1.95E-03 lb/MSF	2	4.72E-04 lb/MSF	3	0.183	0.178
MDI	2.51E-04 lb/MSF	2	7.18E-05 lb/MSF	3	0.024	0.027
Methanol	1.12E-01 lb/MSF	2	8.36E-02 lb/MSF	3	10.49	31.49

Table B-12: Wet ESP Stack Test

Emission Unit: OSB Press (ID No. 4700-00-10);
Energy Cell 1 (ID Nos. 3800-00-10 and 3816-00-11);
Energy Cell 2 (ID Nos. 3900-00-10 and 3916-00-11); and
Dryer Nos. 1, 2, 3, and 4 (ID Nos. 3130-00-11, 3230-00-11, 3330-00-11, and 3430-00-11)
Control Device: Wet Electrostatic Precipitator Nos. 1 and 2 (ID No. 4110-00-10 and 4120-00-10)
Biofilter (ID Nos. 4800-00-10)
Emission Point: ID No. 23

Potential Emissions Summary (continued):¹

Hazardous Air Pollutant	Hourly Emission Factor	Reference	Annual Emission Factor	Reference	Uncontrolled Emissions	
					(lb/hr)	(ton/yr)
Methyl isobutyl ketone	1.47E-03 lb/MSF	2	7.52E-04 lb/MSF	3	0.138	0.283
Naphthalene	2.29E-07 lb/ODT	5	2.29E-07 lb/ODT	5	1.28E-05	5.62E-05
Nickel	4.32E-05 lb/MSF	2	1.82E-05 lb/MSF	3	0.004	0.007
Phenol	0.00E+00 lb/MSF	6	0.00E+00 lb/MSF	6	0.000	0.000
POM	3.23E-07 lb/ODT	5	3.23E-07 lb/ODT	5	1.81E-05	7.92E-05
Propionaldehyde	1.06E-02 lb/MSF	2	2.21E-03 lb/MSF	3	0.999	0.831
Toluene	1.72E-03 lb/MSF	2	6.29E-04 lb/MSF	3	0.161	0.237
Xylenes	8.00E-03 lb/ODT	5	8.00E-03 lb/ODT	5	0.448	1.962
Total MACT HAP	--	-	--	-	19.37	48.72
Total HAP	--	-	--	-	26.21	59.29

Methanol 90% controlled based on Biofilter

Methanol Adjustment for VOC Calculation	Uncontrolled	Controlled		Uncontrolled	Controlled
Methanol (lb/hr):	10.49	1.05	Methanol (tpy):	31.49	3.15
Methanol as propane (lb/hr):	4.81	0.48	Methanol as propane (tpy):	14.43	1.44
Methanol Response Factor:	65%	65%		65%	65%
Methanol Adjustment as propane (lb/hr):	3.13	0.31	Methanol Adjustment as propane (tpy):	9.38	0.94
Total WPP1 VOC(lb/hr)⁴:	59.1	48.60	Total WPP1 VOC(tpy)⁴:	145.5	117.14
Total VOC as Propane (lb/hr):	47	44.36	Total VOC as Propane (tpy)	113	104.63

References:

- Stack testing includes contributions from strand drying, direct wood-firing, and the press. Hourly emission rates are based on the Maximum Hourly OSB Production. Annual emission rates are based on the Average Annual OSB Production. Uncontrolled values are without RCO control.
- Emission factor based on stack testing conducted on the Wet ESP. Emission factor represents the 95th % Confidence Level.
- Emission factor based on stack testing conducted on the Wet ESP. Emission factor represents the average of test runs.
- VOC emission testing was performed from 1997 through 2006; all results were converted to a propane basis. Per EPA's *Interim VOC Measurement Protocol for the Wood Products Industry - July 2007*, WPP1 VOC is calculated based on VOC as propane, plus formaldehyde and methanol emissions, with a methanol adjustment.
- Reportable Compound Estimating Guide OSB Mills, 2002, prepared by Weyerhaeuser Environmental Technology and Science. Emission factors for direct wood-fired OSB dryers.
- Phenol resulted in non-detect on all runs and the detection limit is less than 1 ppm.
- VOC annual emission factor based on stack testing cited in #3 adjusted for 90% Methanol DRE from Biofilter
The emission factor represents the average of test runs conducted on WESP therefore VOC and Methanol were measured simultaneously.
- The WPP1 VOC factor was developed per EPA OTM-26 method, which takes the average as-carbon emission rate converted to propane by multiplying by 1.22, and then adjusts for formaldehyde, methanol, and non-VOC compounds.

ATTACHMENT O

**MONITORING/RECORDKEEPING/REPORTING/
TESTING PLANS**

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

MONITORING, RECORD KEEPING, REPORTING, TESTING PLANS

Monitoring

Weyerhaeuser plans to monitor the biofilter bed temperature in accordance with the MACT requirements. The average bed operating range will be defined during the control devices initial compliance testing demonstration.

Recordkeeping

Weyerhaeuser will retain all required monitoring records for five (5) years, two (2) years on site, certified by a company official at such time that the DAQ may request said records.

Records will also be maintained to document routine maintenance time in order to comply with the routine control device maintenance exemption (RCDME) when approved by WVDAQ in accordance with 40CFR63, Subpart DDDD

Reporting

Weyerhaeuser will comply with all MACT and Title V reporting which shall include reporting the results of compliance demonstrations as well as any malfunctions or deviations with respect to emission and operating limits.

Testing

As mentioned above the new biofilter control device will be required to conduct initial MACT demonstration testing within 180 days of startup.

ATTACHMENT P

PUBLIC NOTICE

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Weyerhaeuser NR Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Rule 13/Title V Permit to Modify the Sutton OSB Facility in Heaters, Braxton County, West Virginia. The latitude and longitude coordinates are: 38.762450 and -80.653240.

The applicant estimates the modification will change the facility's potential to discharge of the following Regulated Air Pollutants:

Pollutant	Tons/yr
VOC	61.4
PM	3.89
PM10	3.89
PM2.5	3.89
HAPs	9.85
Methanol	- 6.06
NOx	- 4.81
CO	- 6.08

Application will take place upon issuance of permit. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the th day of April, 2016.

By: Weyerhaeuser NR Company
Matthew Rutherford
Environmental Manager
3601 Gauley Pike
Heaters, WV 26627

ATTACHMENT Q

CONFIDENTIAL BUSINESS INFORMATION (SEE NOTE)

Note: No information contained within this application is claimed confidential.

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

ATTACHMENT R

AUTHORITY FORMS

Rule 13 / Title V Permit Modification Application

Sutton OSB Mill
Heaters, West Virginia

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Sutton OSB • 3601 Gauley Turnpike • Heaters, WV 26627

**WEYERHAEUSER NR COMPANY
DESIGNATION OF DULY AUTHORIZED REPRESENTATIVE
(CERTIFICATION AND SIGNATORY REQUIREMENTS)**

The responsible corporate officer hereby designates the Mill Manager as duly authorized representative for the Weyerhaeuser Oriented Strand Board (OSB) facility in Heaters, West Virginia for the purpose of signing and submitting permit applications, reports required by the permits, and other information requested by any federal, state, or local regulatory agency in accordance with 40 CFR 71.2 and 122.22.

Duly Authorized Representative by Title/Position	Facility Name
Mill Manager	Arcadia, LA OSB
Mill Manager	Elkin, NC OSB
Mill Manager	Grayling, MI OSB
Mill Manager	Sutton, WV OSB

By signature below, the responsible corporate officer certifies that the above named individual is qualified to act as duly authorized representative under the provisions of 40 CFR 71.2 and 122.22

RESPONSIBLE CORPORATE OFFICER



3/6/2015

Signature of Responsible Corporate Officer

Date

Adrian M. Blocker

Name (Print or Type)

Senior Vice President – Wood Products

253.924.3334

Title

Telephone



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304 926 0475 • FAX: 304 926 0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

March 27, 2012

CERTIFIED MAIL
91 7108 2133 3939 1854 4982

Ms. Cathy Slater, Vice-President
Oriented Strand Board Manufacturing
Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, WV 26627

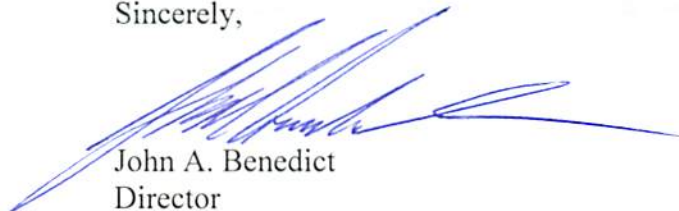
Re: Responsible Official Change
Facility ID 007-00016
Neal, West Virginia

Dear Ms. Slater:

Based on your letter, dated March 9, 2012, the Division of Air Quality (DAQ) hereby acknowledges Jesse Merica, Mill Manager, as a delegated authorized representative for the above-referenced facility.

Should you have any questions or comments, please feel free to contact our office at the address or telephone number listed above.

Sincerely,



John A. Benedict
Director

JAB/seh

c: Jesse Merica, Mill Manager
Michael Nolan, Weyerhaeuser Corporate Environmental Manager
Matthew Rutherford, Sutton Site Environmental Manager
Megan Murphy
File Room

Promoting a healthy environment.

ATTACHMENT S

TITLE V REVISION INFORMATION

Rule 13 / Title V Permit Modification Application

**Sutton OSB Mill
Heaters, West Virginia**

Weyerhaeuser NR Company
3601 Gauley Turnpike
Heaters, West Virginia

April 2016

Attachment S
Title V Permit Revision Information

1. New Applicable Requirements Summary	
Mark all applicable requirements associated with the changes involved with this permit revision:	
<input checked="" type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input type="checkbox"/> NESHAP (45CSR15)	<input type="checkbox"/> Nonattainment NSR (45CSR19)
<input type="checkbox"/> Section 111 NSPS (Subpart(s) _____)	<input checked="" type="checkbox"/> Section 112(d) MACT standards (Subpart(s) <u>DDDD</u> _____)
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input type="checkbox"/> 45CSR27 State enforceable only rule
<input checked="" type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) ⁽¹⁾
<input type="checkbox"/> NO _x Budget Trading Program Non-EGUs (45CSR1)	<input type="checkbox"/> NO _x Budget Trading Program EGUs (45CSR26)
<p>⁽¹⁾ If this box is checked, please include Compliance Assurance Monitoring (CAM) Form(s) for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why Compliance Assurance Monitoring is not applicable:</p> <p style="margin-left: 40px;">The change in method of control covered by this permit modification is subject to PCWP MACT requirements under 40CFR63, Subpart DDDD. Therefore the control device is exempt from CAM as a result of being subject to a 112 standard promulgated after 1990</p>	

2. Non Applicability Determinations
List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.
<input type="checkbox"/> Permit Shield Requested <i>(not applicable to Minor Modifications)</i>
<i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i>
3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? Yes No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
R13-1761G	03/12/2009	
R30-00700016-2013	04/22/2013	
	/ /	

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
	MM/DD/YYYY	
	/ /	
	/ /	

6. Change in Potential Emissions

Pollutant	Change in Potential Emissions (+ or -), TPY
NOx	-4.8
CO	-6.1
VOC	61.4
PM10	3.9
HAPs	9.8
Methanol	-6.1
Formaldehyde	0.70

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

7. Certification For Use Of Minor Modification Procedures (Required Only for Minor Modification Requests)

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed): _____ <i>(Please use blue ink)</i>	Date: ____/____/____ <i>(Please use blue ink)</i>
Named (typed): _____	Title: _____

Note: Please check if the following included (if applicable):

<input type="checkbox"/>	Compliance Assurance Monitoring Form(s)
<input type="checkbox"/>	Suggested Title V Draft Permit Language

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT T

MODIFICATION PERMIT APPLICATION FEE

Rule 13 / Title V Permit Modification Application

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PROPOSED PERMITS

Rule 13 / Title V Permit Modification Application

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