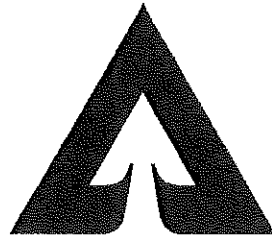


COMPLIANCE TEST REPORT
DETERMINATION OF AUDIT ACCURACY FOR THE
RO STACK OPACITY MONITOR

RECEIVED

SEP 29 2016

AIR QUALITY DIV.



Weyerhaeuser

4111 West Four Mile Road

Grayling, Michigan 49738

Prepared by:

Kathi Moss

Environmental Manager

Semi-Annual - Fall 2016



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

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RENEWABLE OPERATING PERMIT
REPORT CERTIFICATION

AIR QUALITY DIV.

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating (RO) Permit program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as described in General Condition No. 22 in the RO Permit and be made available to the Department of Environmental Quality, Air Quality Division upon request.

Source Name Weyerhaeuser Company County Crawford

Source Address 4111 West Four Mile Road City Grayling

AQD Source ID (SRN) B7302 RO Permit No. MI-ROP-B7302-2016 RO Permit Section No. VII (12)

Please check the appropriate box(es):

Annual Compliance Certification (General Condition No. 28 and No. 29 of the RO Permit)

Reporting period (provide inclusive dates): From _____ To _____

1. During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the RO Permit, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the RO Permit.

2. During the entire reporting period this source was in compliance with all terms and conditions contained in the RO Permit, each term and condition of which is identified and included by this reference, **EXCEPT** for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the RO Permit, unless otherwise indicated and described on the enclosed deviation report(s).

Semi-Annual (or More Frequent) Report Certification (General Condition No. 23 of the RO Permit)

Reporting period (provide inclusive dates): From _____ To _____

1. During the entire reporting period, **ALL** monitoring and associated recordkeeping requirements in the RO Permit were met and no deviations from these requirements or any other terms or conditions occurred.

2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the RO Permit were met and no deviations from these requirements or any other terms or conditions occurred, **EXCEPT** for the deviations identified on the enclosed deviation report(s).

Other Report Certification

Reporting period (provide inclusive dates): From 4/1/16 To 9/30/16

Additional monitoring reports or other applicable documents required by the RO Permit are attached as described:
Semi-Annual Data Assessment Dryer System Opacity Monitor Audit Report

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete.

<u>Rina Allen</u>	<u>Plant Manager</u>	<u>(989) 348-3401</u>
Name of Responsible Official (print or type)	Title	Phone Number
		<u>9/20/16</u>
Signature of Responsible Official		Date

1.0 INTRODUCTION

As required by Weyerhaeuser Grayling OSB's Title V Renewable Operating Permit, a Continuous Opacity Monitoring System is installed at the RTO exhaust to monitor opacity from EUDRYERS and EUCOEN. The opacity monitor is a Teledyne LightHawk Model 560, Serial Number 5602516. The COMS is installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR § 60.13; 40 CFR § 60, Appendix B, PS1; and 40 CFR § 60, Appendix F, Procedure 3.

2.0 SUMMARY OF RESULTS

Audit testing was conducted by Weyerhaeuser personnel on the Teledyne LightHawk Opacity monitor servicing the Dryer RO Stack. NIST certifiable attenuators were used. The attenuators were calibrated on April 17, 2014 and on April 8, 2015 at Cal Check LLC of Raleigh, North Carolina. The calibration audit was conducted on **September 15, 2016**, satisfying the second semi-annual quality assurance/quality control requirements for these monitoring systems for 2016.

Attenuator certification forms for the last two calibrations are provided in Appendix A. The two consecutive annual filter calibrations agreed within .5% opacity therefore, in accordance with the new Procedure 3 rule, the next filter calibration is due by April 7, 2020. Calculations of monitor reading accuracies are provided in Appendix B. The results present calibrated attenuator values and monitoring system responses. All accuracies were within the allowable limit of 3.0% ($\leq \pm 3\%$).

Opacity Filter Audit Accuracies Weyerhaeuser, Grayling

Teledyne LightHawk 560 Serial No: 5602516	Next filter calibration due by: April 7, 2020 Path Length Correction Factor (PLCF) = 1.000		
Filter Serial Number	S10170	S10139	S10326
Attenuator Opacity Value: 4/17/2014	Low – 16.9%	Mid – 27.6%	High – 49.0%
Attenuator Opacity Value: 4/8/2015	Low – 16.8%	Mid – 27.6%	High – 48.6%
Change in Opacity	0.1%	0.0%	0.4%

Table 2.1

3.0 TEST PROCEDURES

Daily

This facility's LightHawk 560 opacity monitor is subjected to daily calibrations for zero and upscale drift with an upscale calibration value of 35.67 % opacity. Daily visual checks of the COMS system are conducted by the operating teams on shift and recorded in a daily check sheet. The system alarms automatically for any deviations which are recorded via an in-house DAS called EQAMS into the IP21 data logger and on the human interface, Proficy, where operators can record the cause and resolution to system malfunctions, if they occur.

Quarterly or semi-annual audit procedures on the LightHawk opacity monitor system are performed when ambient temperatures allow removal of the protective housing without creating fogging on the optics. An external zero device is installed and used during the audit.

Semi-annually

Optical Alignment: The Optical alignment assessment was performed as specified in 40 CFR § 60, Appendix F, Procedure 3_ Quality Assurance Requirement for Continuous Opacity Monitoring Systems at Stationary Sources, ASTM D6216-12, and 40 CFR § 60, Appendix B, PS1. Light source window and optical reflectors are cleaned and optical alignment is checked following procedures outlined in the Teledyne 560 LightHawk Opacity Monitor Manual. This procedure is completed before any other part of the audit is performed.

Calibration Error : The Calibration Error Test was performed as specified in 40 CFR § 60, Appendix F, Procedure 3_ Quality Assurance Requirement for Continuous Opacity Monitoring Systems at Stationary Sources, ASTM D6216-12, and 40 CFR § 60, Appendix B, PS1. Low, mid, and high range filters certifiable to the National Institute of Standards and Testing were used. Nine non-consecutive tests were completed using the three filters (three readings with each filter). The calibration error is represented by the sum of the mean differences plus the 95 percent confidence interval expressed as an opacity percentage.

Zero Compensation: The Teledyne LightHawk does not distinguish between zero compensation and dust compensation. The unit automatically applies the dust compensation to the final readings, as required by Procedure 3.

COMS Calibration Audit Tracking

Interval	Quarterly	Quarterly	Quarterly	Semi-Annual	Semi-Annual
Test Date	03/19/2015	06/24/2015	9/29/2015	3/11/2016	9/15/16
Dust / Zero Compensation Before Cleaning	Not recorded but much less than 4%	1.4	1.99	1.05	.92
Dust / Zero Compensation After Cleaning	Not recorded but much less than 4%	0.9	0	0	0
Zero Compensation PASS / FAIL <4% / ≥4%	PASS	PASS	PASS	PASS	PASS
Optical Alignment Confirmed Y/N?	Y	Y	Y	Y	Y
Calibration Error % - Low	0.29	0.63	0.53	0.60	0.33
Calibration Error % - Mid	0.04	0.60	0.05	0.92	0.14
Calibration Error % - High	0.24	0.94	0.11	0.67	0.42
Audit PASS/FAIL	PASS	PASS	PASS	PASS	PASS

Table 3.1

Annual

Zero Alignment: The Teledyne LightHawk 560 calibration kit includes an external zero device which is used for each annual on-stack zero alignment. Off-stack zero alignment was performed on June 8, 2013 prior to initial installation of this replacement opacity monitor system on June 25, 2013. The Manufacturer's Certificate of Conformance was submitted to the Michigan Department of Environmental Quality on 7/24/2013. An on-stack zero alignment was performed during the 2015 2nd quarter opacity audit (3rd consecutive quarterly audit) on 6/24/2015 and the report submitted. An off-stack zero alignment was performed on September 29, 2015 by a certified Teledyne service technician, satisfying the initial requirements imposed by the new Procedure 3 rules. The results are summarized below wherein EZD is the instantaneous zero reading during an on-stack alignment and CPC is the instantaneous zero reading under Clear Path Conditions during an off-stack alignment, SZC is the Simulated Zero Condition, and PZA is the Primary Zero Alignment expressed as a percentage.

Zero Alignment						
Test Date	On Stack/ Off Stack	Dust/Zero Compensation After Cleaning	(Instantaneous opacity reading) Variable EZD (on-stack) CPC (off-stack)	Simulated Zero SZC	Primary Zero Alignment PZA = EZD - SZC PZA = CPC - SZC	PASS/ FAIL ($< \pm 2\%$)
6/24/2015	On Stack	0.9 %	.5%	.3%	.2% Opacity	PASS
9/29/2015	Off Stack	0%	0.10%	0.05%	0.05% Opacity	PASS
9/15/16	On Stack	0%	-0.18%	-0.06	0.12% Opacity	PASS

Table 3.2