

The Future is Worth Doing Right^m

July 10, 2024

Ms. April Lazzaro EGLE - Air Quality Division Grand Rapids District Office 350 Ottawa Avenue NW, Unit 10 Grand Rapids, MI 49503

RE: Worthen Coated Fabrics (SRN P0634) Violation Notice dated June 26, 2024

Dear April:

Worthen Coated Fabrics (Worthen) is in receipt of the Department of Environmental, Great Lakes, and Energy's (EGLE) Violation Notice (VN) dated June 26, 2024. The VN identifies three violations and Worthen has corrected each of them. Below is a summary of the violation and corrective actions taken.

During the records review, EGLE identified that Worthen had not correctly calculated emissions pursuant to 40 CFR Part 63 Subpart OOOO. Worthen submitted corrected calculations on April 15, 2024, to you via email. However, the Deviation Report that was submitted on April 22, 2024, inadvertently did not include this deviation. Attached is an addendum to the Deviation Report that was submitted on April 22nd.

EGLE identified that the site-specific monitoring plan that is required by Subpart OOOO does not adequately address monitoring of the permanent total enclosures (PTEs) associated with the fabric coating line. Attachment B contains Worthen's revised Work Practice and Site-Specific Monitoring Plan that includes monitoring of the PTEs and the information required by 63.4364(c)(3)(e).

During your review of the most recent Method 24 data (report dated August 11, 2023), you noted that the Method 24 percent volatiles for some of the coatings varied from the VOC content contained in the VOC calculation spreadsheets submitted via email on June 14, 2024. The permit requires that Method 24 data be used to determine compliance. Attachment C contains the updated monthly and 12-month rolling VOC calculations.

April, please contact me if you have any questions or require further information.

Sincerely,

Tony Harb Plant Manager Worthen Industries, Inc.

enclosures: Attachment A – Deviation Report Addendum Attachment B – Work Practice and Site-Specific Monitoring Plan Attachment C – VOC Emission Calculations (excel spreadsheets submitted via email)

c: Ms. Jenine Camilleri



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Enforcement Unit Supervisor EGLE, Air Quality Division P.O. Box 30260 Lansing, MI 48909-7760

Kristi Koetje, Worthen Pam Doyon, Worthen Dave Gill, Worthen Amy Austin, POWER Engineers

ATTACHMENT A

Deviation Report Addendum

EGLE

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

RENEWABLE OPERATING PERMIT REPORT CERTIFICATION

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 Permit (ROP) 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 specified in Rule 213(3)(b)(li), and be made available to the Department of Environment, Great Lakes, and Energy, Air Quality Division upon request.

Source Name Worthen Coated Fabrics	County Kent				
Source Address _ 1125 41st Street SE	CityGrand Rapids				
AQD Source ID (SRN) P0634 ROP No. MI-ROP-P0634-2023	ROP Section No. NA				
Please check the appropriate box(es):					
Annual Compliance Certification (Pursuant to Rule 213(4)(c))					
Reporting period (provide inclusive dates): From 01/01/2023 To 12/ 1. During the entire reporting period this source was in compliance with ALL terms or	31/2023				
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 ROP.					
2. During the entire reporting period this source was in compliance with all terms are some and condition of which is identified and included by this reference. EXCERT for	nd conditions contained in the ROP, each				
deviation report(s). The method used to determine compliance for each term and con	dition is the method specified in the ROP,				
unless otherwise indicated and described on the enclosed deviation report(s).					
	1				
Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3)(c))					
Reporting period (provide inclusive dates): From 07/01/2023 To 12/	31/2023				
□ 1. During the entire reporting period, ALL monitoring and associated recordkeeping re	equirements in the ROP 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 requ	irements in the ROP were met and no				
deviations from these requirements or any other terms or conditions occurred, EXCEPT enclosed deviation report(s).	f for the deviations identified on the				
	*)				
Other Report Certification	- double and				
Reporting period (provide inclusive dates): From 07/01/2022 To 12/	21/2022				
Additional monitoring reports or other applicable documents required by the ROP are attached as described:					
Deviation Report - Addendum to Annual Compliance Certification a	nd Semi-Annual Report				
received by EGLE on April 29, 2024.					

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

Frederic P. Worthen III	President	603-821-5949
Name of Responsible Official (print or type)	Title	Phone Number
Jude A hotor		7/11/24
Signature of Responsible Official		Date

* Photocopy this form as needed.

EQP 5736 (Rev 04/30/2019)

EGLE

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

RENEWABLE OPERATING PERMIT DEVIATION REPORT

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

This form may be submitted in conjunction with the Renewable Operating Permit Report Certification form (EQP 5736) to report deviations from all general conditions and special conditions in the Renewable Operating Permit (ROP) for which deviations required to be reported by R 336.1213 (Rule 213) subrule (3)(c) have occurred. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environment, Great Lakes, and Energy, Air Quality Division, upon request. Items 1 - 8 must be completed for all deviations being reported.

Source Name Worthen Coated Fabrics				unty Ke	ent	
Source Address 1125 41st Street SE City				and Rap	pids	
AQD Source ID (SRN)	P0634 ROP N	MI-ROP-P0634	-2023 RC	P Section	n No. NA	
ROP Section Contact NA Contact Phone No. NA						
Reporting Period (provide inclusive dates): From 07/01/2023 to 12/31/2023						
Report Type: Annual Semi Annual Other (Describe) Addendum to Semi-annual Report						
1. Group or Source Wide ID	2. Condition No.	3. Date(s) of Occurrence	4. Previously repo	rted ?	5. Duration of Deviation	
EU-FabricCoating	VI.9	See calculations submitted via email on 4/15/24 for details.	If Yes, Date	1 110	See calculations submitted via email on 4/15/24 for details.	
6. Method Used to Determine Compliance Status 7. Descripti		on of Deviation				
(in different from method sp	becilied in ROP)	Worthen did	not implement zero	capture a	and control during times	
NA		of PTE devi submitted in	of PTE deviations in the NESHAP Subpart OOOO calculations submitted in March 2024.			
8. Reason for Deviation and Description of Corrective Action Taken						

Worthen maintains an emissions tracking database to track coating usage, coating content, and emissions. Emission calculations are performed in the backend of the database. Worthen's current database does not contain coding to implement zero capture and control during times of PTE deviations. Worthen is working with a company to create a new database that will incorporate these calculations. In the meantime, the calculations are being performed in excel spreadsheets.

Worthen revised the Subpart OOOO calculations to implement zero capture and control during times of PTE deviations and submitted the revised calculations via email to April Lazzaro on April 15, 2024.

ATTACHMENT B

Work Practice and Site-Specific Monitoring Plan

WORK PRACTICE AND SITE-SPECIFIC MONITORING PLAN

Worthen Coated Fabrics 1125 41st Street Grand Rapids, Michigan 49508

Revisions Log

Date	Description	Contact	
August 8, 2016	Initial plan	Jack Hoffman	
January 5, 2021	Revisions to include RTO compliance assurance	Kristi Koetje	
April 7, 2021	Minor updates to Section III	Kristi Koetje	
February 17, 2022	Minor updates to Section III	Amy Austin	
March 3, 2023	Minor updates to Section III	Kristi Koetje	
July 10, 2024	Added Section IV	Kristi Koetje	

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I. Introduction

The purpose of this Work Practice and Site-Specific Monitoring Plan is to comply with the requirements of 40 CFR Part 63 Subpart OOOO – National Emission Standards for Hazardous Air Pollutants: Printing, Coating, and Dyeing of Fabrics and Other Textiles to develop and implement a Work Practice Plan to minimize organic hazardous air pollutant (HAP) emissions from the storage, mixing, and conveying of regulated materials used in, and waste materials generated by the solvent-based coating operations. This plan also meets the requirements to develop a site-specific monitoring plan for the capture and control systems that operate during solvent-based coating.

In addition, this Plan ensures implementation of the recommendations provided by EPA's Compliance Assurance Letter electronically submitted to Worthen Coated Fabrics on December 7, 2020.

This plan will be reviewed annually and updated as necessary during the annual review. If corrective procedures or operational changes are required as a result of a deviation, this plan will be updated within 30 days of the deviation.

II. Storage, Mixing and Conveying

In accordance with (63.4293(b)(1) - (5)), this Plan has been developed by Worthen Coated Fabrics (Worthen) to minimize organic HAP emissions from Worthen's storage, mixing and transferring of regulated materials used in, and waste materials generated by, the coating operation. Worthen ensures this safety practice by:

1. Storing all organic HAP-containing regulated materials and subsequent waste materials in closed and properly labeled containers. Proper containers would include all drums, pails, lids and sealing rings as supplied by the material manufacturer.

In addition, other storage containers purchased by Worthen Coated Fabrics with the expressed purpose of providing a safe closure and containment for chemicals containing HAP's will be used.

Containers have covers with crimp tabs, crimp rings, lids with gaskets or bolt secured locking rings.

2. Employing proper handling practices of all raw materials to avoid spills. Hazardous materials are stored in containers appropriate for their volume and properties. Good housekeeping practices are implemented and movement of chemicals throughout the facility is minimized when possible. In the event of a spill, the raw materials or coating will be contained, captured with absorbent material, and stored in our closed hazardous waste drums for proper disposal. Any uncontrolled emissions of HAPs will be listed on our Rule 290 Permit Record Sheets.

- 3. All raw materials containing HAPs are transferred from storage locations to compounding locations in the original manufacturer's containers or in other containers with properly closing lids.
- 4. Mixing vessels are steel drums or larger tanks. All drums are closed with original manufacturer lids. Large volume tanks are closed with a metal rimmed cover. A plastic film is placed on the coating mix prior to the lid placement to prevent evaporation of HAPs into the atmosphere. All compounded coatings are transferred to the coating line in these containers.
- 5. Emissions of organic HAP are minimized during the cleanup of the web coating from coating heads, storage, mixing and conveying equipment. Any cleanup solvent emissions that are considered uncontrollable are listed on our Rule 290 Permit Record Sheets. During solvent cleanup of the coating heads, RTO must be on and at operating temperature during the entirety of the cleanup period.

III. RTO Compliance Assurance

The regenerative thermal oxidizer (RTO), manufactured by NESTEC, Inc., is designed to operate at a maximum process exhaust rate of 25,000 standard cubic feet per minute. The RTO is required to be operated when solvent coatings are applied and when the coating line is cleaned with HAP containing solvent cleaning materials. The minimum destruction efficiency required by Worthen's Renewable Operating Permit (ROP) is 98% A destruction efficiency of 98.36% was demonstrated during stack testing on September 28, 2021, with an average minimum temperature of 1575°F.

1. Corrective procedures or operational changes that restrict the start of solvent-based coating until RTO temperature is above limit and being monitored.

In July 2017, Worthen reconfigured some of the PLC programming of the Patriot coating line and added additional protective logic to prevent the coating line from starting up in solvent mode when the RTO is off or not achieving a minimum temperature. In March 2021, Worthen revised the minimum temperature setting from 1525°F to 1567°F. Once the RTO chamber temperature reaches 1567°F, the RTO online signal is sent to the coater which will allow it to start running in solvent mode as long as the following additional conditions are met:

- exhaust fans from the permanent total enclosures (PTEs) to the RTO are on and creating a negative pressure of 0.007 inches of water in the PTEs.
- damper to RTO is open and damper to bypass stack is closed.

 lower explosive limit (LEL) monitoring devices in the duct work of the oven intake/recirculating airstream are on and able to detect combustible gases.

If any of these conditions are not met, the coating machine will not start up in solvent mode. In addition, if the LEL sensors are on and detect combustible gases, a machine interlock is in place to prevent starting the machine in water-base (uncontrolled) mode.

2. Corrective procedures or operational changes that restrict the improper operation, bypass, or termination of the RTO when solvent-based coatings are being applied.

The programming logic for the operation of the coating line and RTO includes an interlock that prevents startup of the coating line if the average RTO combustion temperature is below 1567°F. If the average combustion temperature of the RTO drops below the set point of 1500°F, an alarm will sound. At the sound of the alarm, operators immediately investigate and attempt to fix the problem. If the temperature drops below 1400°F, the coating line shuts down. The RTO will stay online, but in an alarm state, as long as the temperature is above 1400°F. This is normal industry practice to allow for operational variation and allow time to react and bring the RTO back up to minimum temperature. However, if the temperature remains below 1500°F, a machine problem is indicated and Worthen's Startup, Shutdown and Malfunction Plan instructs the operator to shut the coating line down. In accordance with Worthen's Startup, Shutdown, and Malfunction Plan, an Abatement Malfunction Report Form is completed.

3. Regularly auditing RTO temperature data and operating procedures for continuous compliance.

During solvent coating operations, the RTO temperature is monitored and recorded by the chart recorder and datalogger. Temperature data is retrieved from the datalogger once per week and reviewed to confirm the 3-hour average temperature is at or above 1567°F when solvent-base coatings are applied.

4. Procedures to timely identify and correct cause(s) of any deviations.

Worthen maintains the following procedures for operating the coating line and RTO:

- Startup, Shutdown, Malfunction Plan: Patriot Coater
- SOP-RTO-ENVPROC-MI Operational procedures and controls and emergency procedures for RTO

These procedures are in place and operators are trained to timely identify and correct any issues with the operation of the Patriot coating line and RTO.

5. Procedures for the timely reporting of deviations.

Permit deviations are reported in accordance with Worthen's permit ROP-P0634-2023 as provided by General Conditions 21, 22 and 25 and Rules 912 (336.1912) and 213 (336.1213). Specifically, deviations from ROP requirements are reported as follows:

- a. For 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, provide notice to the EGLE Air Quality District office within two business days after discovery of the event. Notice can include electronic or oral communication. A written report is required to be submitted within 10 days after the malfunction has been corrected, or within 30 days of discovery of the malfunction, whichever is first.
- b. In accordance with 40 CFR Part 63 Subpart OOOO, a deviation from an emission limitation is required to be reported in the semiannual report containing the information outlined in 63.4311(a)(7).

6. Update to minimum temperature

Based on stack testing conducted on September 28, 2021, the new minimum RTO chamber temperature is 1574° F.

7. Training

Operators are provided initial and refresher training on operation of the coating line and RTO and are trained prior to a change in operating procedure. Worthen maintains a training log to document the date of training and employees trained.

IV. Capture System Monitoring

Worthen maintains two permanent total enclosures (PTEs) on its coating line to capture and direct emissions to the RTO when solvent coatings are applied. Under 40 CFR Part 63 Subpart OOOO, Worthen is using the emission rate with add-on controls option for application of solvent-based coating and emission rate without add-on controls option for application of water-based coating. The PTEs are required to be operating during solvent based coating. Under Subpart OOOO, the PTEs are not required to be operating during water-based coating since no control device is used to demonstrate compliance. The PTEs are required by Worthen's ROP during water-based coating. This plan does not address operation of the PTEs during water-based coating under the ROP.

40.4364(e) requires that a monitoring plan be developed and that it contains the information specified in 40.4364(e)(1) and (2).

The operating parameter that is monitored to ensure that the capture efficiency determined during the initial and subsequent compliance tests is differential pressure. The parameter is appropriate for demonstrating ongoing compliance because it is a standard and proven indicator for PTEs and changes in pressure differential indicate changes in capture system performance. The indicator range for the PTEs is 0 to -5.0 inches of water column. Pressure is measured at points inside and outside each enclosure by pressure transducers. Pressure differential, in inches of water column, is recorded continuously at 15-minute intervals using a data acquisition system. The 15-minute readings are averaged over 3-hour blocks of time. If a 3-hour block average pressure differential is less than 0.007 inches of water column, then it is considered a deviation and reported in the semi-annual report.

ATTACHMENT C

VOC Emission Calculations

(excel spreadsheets submitted via email)