

State Registration Number

N3078

**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number

MI-ROP-N3078-2021a

**Michigan Foam Products, LLC**

State Registration Number (SRN): N3078

Located at

1820 Chicago Drive SW, Grand Rapids, Kent County, Michigan 49519

Permit Number: MI-ROP-N3078-2021a

Staff Report Date: December 7, 2020

Amended Date: June 7, 2023

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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## RENEWABLE OPERATING PERMIT

ROP Number

DECEMBER 7, 2020 - STAFF REPORT

MI-ROP-N3078-2021

### Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

### General Information

Stationary Source Mailing Address:	Michigan Foam Products, LLC 1820 Chicago Drive SW Grand Rapids, Michigan 49519
Source Registration Number (SRN):	N3078
North American Industry Classification System (NAICS) Code:	326140
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Initial Issuance
Application Number:	201900197
Responsible Official:	Brian Anderson, General Manager 616-452-9611
AQD Contact:	Adam Shaffer, Environmental Quality Analyst 616-970-9077
Date Application Received:	November 27, 2019
Date Application Was Administratively Complete:	January 28, 2019
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	December 7, 2020
Deadline for Public Comment:	January 6, 2021

## Source Description

Michigan Foam Products, LLC is a family owned business that produces expanded polystyrene foam products at their current location in Wyoming, Kent County, Michigan. The area surrounding the site is a mixture of commercial/industrial businesses, wooded areas, a body of water to the south, a park, and residential structures. During onsite processes, Michigan Foam Products, LLC receives pentane impregnated polystyrene beads that are expanded by steam heat into larger spheres. These are then molded into large solid blocks of varying densities and sizes. The blocks are then aged before going through applicable postproduction operations such as wire cutting and embossing to meet the specific demands of customers. The primary pollutant from this process is volatile organic compounds (VOCs) and emissions from the operations are emitted uncontrolled.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2019**.

### **TOTAL STATIONARY SOURCE EMISSIONS**

<b>Pollutant</b>	<b>Tons per Year</b>
Volatile Organic Compounds (VOCs)	80.99

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2019 by the company:

<b>Individual Hazardous Air Pollutants (HAPs) **</b>	<b>Tons per Year</b>
<b>Total Hazardous Air Pollutants (HAPs)</b>	<b>&lt;1</b>

\*\*As listed pursuant to Section 112(b) of the federal Clean Air Act.

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

## Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is in Kent County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of VOCs exceeds 100 tons per year.

The stationary source is a minor source of hazardous air pollutant (HAP) emissions because the potential to emit of any single HAP regulated by Section 112 of the federal Clean Air Act, is less than 10 tons per year and the potential to emit of all HAPs combined is less than 25 tons per year.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of VOCs was less than 250 tons per year.

EUBOILER was installed on July 23, 1999 and was exempt from New Source Review (NSR) permitting requirements at the time it was installed. However, future modifications of this equipment may be subject to NSR. Based on the size of EUBOILER (<10 MMBTU/hr) the boiler is not subject to New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR

Part 60, Subpart Dc). Michigan Foam Products, LLC is not a major source of HAPS; therefore, the boiler is not subject to the National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, (40 CFR Part 63, Subpart DDDDD). Michigan Foam Products, LLC is an area source of HAPs; however, the boiler is natural gas fired and, therefore, not subject to the National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers (40 CFR Part 63, Subpart JJJJJJ).

Michigan Foam Products, LLC was issued Permit to Install (PTI) No. 33-99 for a molded polystyrene foam manufacturing process on July 23, 1999. The process had a 32 ton per year (tpy) VOC emission limit per a 12-month rolling time period. The permit also had a VOC emission limit of 5.1 pounds per 100 pounds of expandable polystyrene (EPS) beads processed based on a 12-month rolling time period.

On October 2, 2002, PTI No. 211-02 was issued for an expansion of the polystyrene process. The permit was for EUPLASTICRESIN, which consisted of a Preex 9000 vacutrans batch-type resin pre-expander, canvas holding bags, Big W adjustable wall mold, hot room, wire cutting operation, embossing area, and other polystyrene foam producing operations. The permit included a facility wide VOC emission limit of 32 tpy per a 12-month rolling time period.

An increase in the VOC emission limit was approved with PTI No. 211-02A on August 19, 2004. The facility wide VOC emission limit was raised to 64 tpy per a 12-month rolling time period.

On May 4, 2006, PTI No. 211-02B was approved for the addition of one GP 11000 Autowire slabbing system to onsite process operations. Facility wide VOC emission limits were not changed during this permit modification.

An increase in VOC emissions, pentane (VOC) content, and throughput was approved with PTI No. 211-02C on September 26, 2018. The VOC emission limit was raised to 88 tpy per a 12-month rolling time period. The VOC content of EPS beads was raised to 6.3 pounds per 100 pounds of EPS beads based on a 12-month rolling time period.

An increase of the VOC emission limit for EUPLASTICRESIN to 115 tpy per a 12-month rolling time period was approved with PTI No. 211-02D on May 30, 2019. A VOC emission limit of 352 lbs. per 8 hours was also included. The source became subject to Title V with the issuance of this permit.

During the permitting process for PTI No. 211-02D, based on the BACT analysis, the AQD determined that control of the combined pre-expander and bag storage emissions would be cost effective. In response to this, Michigan Foam Products, LLC agreed to take a lower VOC limit of 115 tpy instead of the originally intended 125 tpy. After further review it was determined that control was not cost effective for this project at the 115 tpy VOC emission limit.

Toxic air contaminants were evaluated according to Rule 225. The blowing agent in EPS beads is pentane (CAS No. 109-66-0) and has an initial threshold screening level with an 8-hour averaging time. Using the allowable emission rate (AER) algorithm from Table 21 of Rule 227 to calculate potential worst case pentane emission, it was determined that a VOC emission limit of 352 lbs. per 8 hours would be included for EUPLASTICRESIN, in order to pass the AER 8-hour initial threshold screening level.

During the ROP process, Michigan Foam Products, LLC submitted a PTI application for an increase in their 8-hour VOC (pentane) emission limit after being issued a Violation Notice for exceedances. An increase in the 8-hour VOC emission limit to 1,909.0 lbs as well as changes to stacks listed was approved and included in PTI No. 211-02E, dated October 20, 2020.

During the technical review of the ROP application, several changes were requested and made to the current sampling plan that Michigan Foam Products, LLC has in place. Changes included but are not limited to increasing of sampling to consist of the most used products until 80% of the total usage from the

previous calendar year has been met. Additionally, if the highest VOC content bead is not included in the products to be sampled for that sample to be included as well. Several rough drafts reports were submitted to the AQD and refined. The final corrected sampling plan was submitted to and received by the AQD on November 24, 2020

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

No emission units have emission limitations or standards that are subject to the federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

**Source-Wide Permit to Install (PTI)**

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

**Streamlined/Subsumed Requirements**

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

**Non-applicable Requirements**

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

**Processes in Application Not Identified in Draft ROP**

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

<b>PTI Exempt Emission Unit ID</b>	<b>Description of PTI Exempt Emission Unit</b>	<b>Rule 212(4) Citation</b>	<b>PTI Exemption Rule Citation</b>
EUBOILER	Natural Gas Boiler (8.37 MMBTU/hr)	Rule 212(4)(c)	Rule 282(2)(b)(i)
EUSPACEHEATERS	Six (6) Ceiling Mounted Space Heaters (0.115 MMBTU/hr)	Rule 212(4)(c)	Rule 282(2)(b)(i)

**Draft ROP Terms/Conditions Not Agreed to by Applicant**

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

**Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

### **Action taken by EGLE, AQD**

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Heidi Hollenbach, Grand Rapids District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

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**JANUARY 7, 2021 - STAFF REPORT ADDENDUM**

**Purpose**

A Staff Report dated December 7, 2020, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

**General Information**

Responsible Official:	Brian Anderson, General Manager 616-452-9611
AQD Contact:	Adam Shaffer, Environmental Quality Analyst 616-970-9077

**Summary of Pertinent Comments**

No pertinent comments were received during the 30-day public comment period.

**Changes to the December 7, 2020 Draft ROP**

No changes were made to the draft ROP.

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**RENEWABLE OPERATING PERMIT**  
**JUNE 7, 2023 - STAFF REPORT FOR RULE 216(2)**  
**MINOR MODIFICATION**

ROP Number  
MI-ROP-N3078-2021a

**Purpose**

On February 25, 2021, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-N3078-2021 to Michigan Foam Products, LLC pursuant to Rule 214 of the administrative rules promulgated under Act 451. Once issued, a company is required to submit an application for changes to the ROP as described in Rule 216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to Rule 216(2).

**General Information**

Responsible Official:	Jeff Meyer, President 616-633-7380
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202300074
Date Application for Minor Modification was Submitted:	April 19, 2023

**Regulatory Analysis**

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to Rule 216(2).

**Description of Changes to the ROP**

Minor Modification Number 202300074 was to incorporate PTI No. 211-02F into the ROP, which was to install a regenerative thermal oxidizer on the pre-expander to allow for an increase in production without an increase in emissions. The PTI was not required to go through the public participation process.

**Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

**Action Taken by EGLE**

The AQD proposes to approve a Minor Modification to ROP No. MI-ROP-N3078-2021, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the Minor Modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by any affected states or the USEPA.