

State Registration
Number
N7221

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N7221-2019b

R.L. Adams Plastics, Inc.

State Registration Number (SRN): N7221

Located at

5955 Crossroads Commerce, Wyoming, Kent County, Michigan 49519

Permit Number: MI-ROP-N7221-2019b

Staff Report Date: August 12, 2019

Amended Dates: March 24, 2021
September 8, 2022

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

August 12, 2019 - STAFF REPORT

MI-ROP-N7221-2019

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:	R.L. Adams Plastics, Inc. 5955 Crossroads Commerce Wyoming, Michigan 49519
Source Registration Number (SRN):	N7221
North American Industry Classification System (NAICS) Code:	326140
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201900013
Responsible Official:	Karl Adams, President 616-261-4400
AQD Contact:	Adam Shaffer, Environmental Quality Analyst 616-970-9077
Date Application Received:	February 4, 2019
Date Application Was Administratively Complete:	February 4, 2019
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	August 12, 2019
Deadline for Public Comment:	September 11, 2019

Source Description

R.L. Adams Plastics, Inc. is a family owned business that was founded in the late 1970's and produces foam products at their current facility located in Wyoming, Kent County, Michigan. The area surrounding the site is a mixture of various types of land use including commercial, residential and the Paul B. Henry Freeway.

The three main areas of foam production on site are food services, building products, and arts / crafts. At the start of the process, plastic polystyrene pellets are transferred from storage silos to the extrusion lines. Here the heated polystyrene resin is injected with an expansion gas (blowing agent) consisting of isopentane (volatile organic compounds (VOCs)), carbon dioxide and/or hydrofluorocarbons (HFC) 152a (1,1 difluoroethane). Historically, the blowing agent of choice had been R12, which was later phased out in the 1990's due to the environmental concerns and was replaced with hydrofluorocarbons. Currently the facility utilizes one of the three previously mentioned blowing agents with the VOC based isopentane being the primary cause of the company's major source VOC status. Once this mixture leaves the extruder, the gas is relieved, expands and forms bubbles within the cooling polystyrene resin. Once the extrusion process is complete, the sheeted material is rolled up and placed in storage to be aged appropriately to the desired finished product.

Following storage and aging, the product will next go through various processes such as thermoforming for food service products or lamination for building products and arts / crafts products. Once completed, the finished products are packaged and shipped off site. Scrap materials from both the lamination and thermoforming processes are collected, with all of the thermoforming scrap collected being grinded, re-pelletized and reused in the extrusion operations. The scrap from the lamination process is not reused and instead is collected, grinded and shipped off site. The vast majority of emissions comes from the regrind operations where scrap is grinded, and the encapsulated gases are released.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2018**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Particulate Matter (PM)	0.004
Volatile Organic Compounds (VOCs)	135.71

**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 are 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.

R.L. Adams Plastics, Inc. was issued Permit to Install (PTI) No. 247-02 for equipment used to manufacture the laminate and plate stock, and the scrap removal system. The permit had a VOC limit of 89.5 tons per year (tpy) and a particulate matter (PM) limit of 0.73 tpy. PTI No. 247-02A was to request changes to wording of the permit, the addition of a second thermo former to make plate stock and an additional bag house for the reclaim area. Also, a request was made for the review of a PM study for the regrind area. The changes being made would decrease PM emissions and it was concluded that the previous review of PM would still stand. An emission limit increase for VOCs to 130 tpy was approved in PTI No. 247-02B. An emission limit decrease for VOCs down to 97.5 tpy was issued in PTI No. 247-02C. An emission limit increase of VOCs back up to 130 tpy was issued in PTI No. 247-02D. Following this, PTI No. 247-02D was voided and incorporated in Renewable Operating Permit (ROP) No. MI-ROP-N7221-2010. Following the issuance of ROP No. MI-ROP-N7221-2015, a minor modification was processed to incorporate PTI No. 247-02E into the ROP and MI-ROP-N7221-2015a was issued. PTI No. 247-02E was for an emission limit increase for VOCs to 170 tpy as well as adding an emission limit of 170 tpy for 1,1 difluoroethane.

During the review of PTI No. 247-02E, combustion control was considered a potential option to meet best available control technology (BACT) for the VOC increase and adding of 1,1 difluoroethane. Since the control could be for both VOC and 1,1 difluoroethane emissions, the cost was calculated for both. Also, since 1,1 difluoroethane is not a VOC it is subject to best available control technology for toxics (T-BACT). HFC 152a (1,1 difluoroethane) contains fluorine, which when oxidized produces hydrogen fluoride that is corrosive to the control device. Since combustion control of HFC 152a emissions would generate hydrogen fluoride, the cost to control VOC, HFC 152a and hydrogen fluoride emissions was evaluated. Several scenarios were considered and determined not to be economically feasible. It was concluded that BACT consisted of no control device. A 170 tpy limit for isopentane was added for Rule 702(a) BACT and a 170 tpy 1,1 difluoroethane emission limit was added to the PTI as part of the Rule 224 T-BACT analysis. It was noted that with higher throughputs of HFC 152a it could result in higher amounts of hydrogen fluoride emissions. With higher emissions, this could result in emission controls becoming more cost effective and thus economically feasible.

To meet Rule 225 for toxic air contaminants, the isopentane (VOC) and HFC 152a (1,1 difluoroethane) emissions were evaluated against their screening levels using the Rule 227(1)(a) allowable emission rate (AER). Based on the estimated hourly emission rates of 38.8 lbs/hr each, the emissions are less than the AERs.

R.L. Adams Plastics, Inc. has been in operation with ROP No. MI-ROP-N7221-2015a since November 14, 2017. In the most recent inspection, on February 20, 2019, R.L. Adams Plastics, Inc. was determined to be in non-compliance. The violations identified were failure to record daily pressure drop readings and incorrect stack dimensions. A Violation Notice, dated April 19, 2019, was issued to the company. As part of the response to the violation notice, and in order to correct the stack dimensions in the existing ROP, PTI No. 77-19 was issued on May 22, 2019. PTI No. 77-19 is being rolled into the ROP concurrently during this renewal process.

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.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-N7221-2015a are identified in Appendix 6 of the ROP.

PTI Number			
247-02D			

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

There were no processes listed in the ROP Application as exempt devices under Rule 212(4). Exempt devices are not subject to any process-specific emission limits or standards in any applicable requirement.

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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2019

September 12, 2019 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated August 12, 2019, 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:	Karl Adams, President 616-261-4400
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 August 12, 2019 Draft ROP

No changes were made to the draft ROP.

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2019

November 12, 2019 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated August 12, 2019, 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 changes made to the proposed ROP following the 45-day EPA comment period.

General Information

Responsible Official:	Karl Adams, President 616-261-4400
AQD Contact:	Adam Shaffer, Environmental Quality Analyst 616-970-9077

Summary of Pertinent Comments

The company commented on FGPROD®RIND, Special Condition (SC) V.3 of the ROP stating that services to complete testing of 1,1 difluoroethane were difficult to locate. It was determined that testing of the 1,1 difluoroethane content for the laminate stock finished goods is not readily available to be completed by laboratory services. After further review, it was decided that the language of FGPROD®RIND, SC V.3 in ROP No. MI-ROP-N7221-2019 be changed back to the previous language requiring testing upon request as per ROP No. MI-ROP-N7221-2015a.

Changes to the September 12, 2019 Proposed ROP

FGPROD®RIND, SC V.3 in MI-ROP-N7221-2019 was changed back to the previous language identified in MI-ROP-N7221-2015a. Since 1,1 difluoroethane is regulated under Rules 224 and 225 and is a state-only enforceable pollutant and not federally enforceable, the changes made do not require the proposed ROP to go through an additional EPA review.

State Registration Number

N7221

RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-N7221-2019a

March 24, 2021 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

Purpose

On November 12, 2019, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-N7221-2019 to R.L. Adams Plastics, Inc. 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:	Karl Adams, President 616-261-4400
AQD Contact:	Caryn Owens, Environmental Engineer 231-878-6688
Application Number:	202100024
Date Application for Minor Modification was Submitted:	February 8, 2021

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 No. 202100024 was to incorporate PTI No. 247-02F which was to install a new extrusion line to produce foam; the blowing agents will be the same as the existing equipment, isopentane (IP) and 1,1 difluoroethane (DFE). Neither the emissions limits or production limits were increased due to the new line. Additionally, the stack for the new extrusion line was added to the conditions.

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-N7221-2019, 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.

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RENEWABLE OPERATING PERMIT

ROP Number

MI-ROP-N7221-2019b

September 8, 2022 - STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION

Purpose

On May 10, 2021, the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-N7221-2019a to R.L. Adams Plastics, Inc. 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:	Karl Adams, President 616-261-4400
AQD Contact:	Caryn Owens, Senior Environmental Engineer 231-878-6688
Application Number:	202200144
Date Application for Minor Modification was Submitted:	July 21, 2022

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 202200144 was to incorporate PTI No. 247-02G which modified how the scrap processing vented to the dust collectors, changed the way the VOC emissions were calculated, changed "Platestock" to "Thermoformed goods", changed the testing requirements for the VOC content of the finished goods to be on a calendar year basis, and change which dust collectors the scrap processing equipment vents to.

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-N7221-2019a, 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.