DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N722172751

FACILITY: R L Adams Plastics, Inc.		**SRN / ID:** N7221
LOCATION: 5955 Crossroads Commerce, WYOMING		**DISTRICT:** Grand Rapids
CITY: WYOMING		**COUNTY:** KENT
CONTACT: Anette Arrieta , Industrial Engineer		**ACTIVITY DATE:** 07/09/2024
STAFF: April Lazzaro	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff April Lazzaro arrived at the R.L. Adams Plastics, Inc. (R.L. Adams) facility located at 5955 Crossroads Commerce Wyoming, MI 49519 to conduct an unannounced, scheduled inspection. No odors or visible emissions were noted upon arrival at the facility.

Facility Description

R.L. Adams produces extruded polystyrene foam products for the food services, building products, and arts and crafts industries. Plastic polystyrene pellets are transferred from storage silos to one of three extrusion lines. A fourth extrusion line is currently undergoing installation. The polystyrene resin is injected with an expansion gas (blowing agent) consisting of isopentane, carbon dioxide and/or hydrofluorocarbons (HFC) 152a (1,1 difluoroethane) at the expanders and the polystyrene foam is made into sheet stock and rolled up. Following expansion, the rolled polystyrene foam is aged in the preproduction storage area. Following ageing the rolled polystyrene foam is further processed on either one of two laminators or five thermoformers. Finished products are either shipped out for sale or stored in a warehouse for future distribution. Common products made are foam bowls and plates and compartment plates & trays, fanfold insulation board, sheet insulation, and readi-board foam board in a variety of colors and sizes. Scrap polystyrene foam is created at each thermoforming machine, which are equipped with a grinder and a pneumatic scrap removal system. All of the regrind is recycled and reintroduced into the extrusion process.

The facility operates pursuant to Renewable Operating Permit (ROP) No. MI-ROP-N7221-2019b, which was most recently modified on October 25, 2022, to include the addition of the fourth extrusion line. Permit to Install (PTI) No. 7-24 for particulate matter (PM) monitoring device operation and installation on the regrind dust collectors was issued in January, 2024. At the time of the inspection, the PM monitoring devices had not yet been installed and will be discussed further below.

Compliance Evaluation

MI-ROP-N7221-2019b

FGPROD&REGRIND

This flexible group is for all equipment used to manufacture the polystyrene expanded foam; extruders to produce the foam, laminators, and thermoformers; and the scrap removal system for the laminators, thermoformers, and central grinder.

The various emission units in FGPROD&REGRIND were observed during the inspection. At the start of the process, plastic polystyrene pellets are transferred from four storage silos to one of three extrusion lines. A fourth extrusion line is present, but not operational. Additionally, re-grind material from the thermoforming process is also used here. During the extrusion process one of two blowing agents are used, which are isopentane and hydrofluorocarbon 152a. Isopentane is the only volatile organic compound (VOC) of the two listed blowing agents. After the extrusion process, the sheets are aged 5-7 days depending on the product and customer demands. Once appropriately aged, the rolls of sheet stock are sent to either the thermoforming or lamination process areas.

During the inspection the gas totalizer monitoring gauges were observed. Each unit displayed the current pounds per hour (lbs/hr) of isopentane being used. At the time of the inspection, three extruders were operating. Extruder one was using 44.1 lbs/hr isopentane, extruder two was using 25.2 lbs/hr isopentane and extruder three was using 58.2 lbs/hr isopentane. RL Adams appears to be adequately monitoring the isopentane usage.

During the inspection, we discussed the installation status of extruder four, and additional information related to the installation progress was discussed. This was required because the permit states that if construction on the emission unit is not started or is interrupted for a period of 18-months, the permit would no longer be valid for the process. A timeline of activities related to the installation of extruder four was requested and received, a review of the initial timeline found that there appeared to be a time when no physical work was done on the emission unit. An updated timeline was requested and received. Based on a review of this information, there does not appear to have been an 18-month interruption of physical work on the unit.

The thermoforming process area consists of five thermoforming lines. Products produced here include items such as plates and bowls. All waste material from the thermoforming process is grinded before being sent to the reclaim line. The reclaim line was observed during the site inspection. In the reclaim line the grinded material from the thermoforming lines is made back into pellets before being reused.

The laminator process consists of two laminator lines. Laminator # 1 is used for producing building products and laminator # 2 is used for producing arts and crafts materials. Waste materials from this area are collected and sent to the EUREGRIND area before being shipped offsite. Once the finished products from the laminator or thermoforming lines are completed, they are packaged and sent off site.

FGPROD&REGRIND has two emission limits for both VOC,s and 1,1 difluoroethane, each of 170 tons per year (tpy) based on a 12-month rolling time period. The permit identifies an equation that should be used for calculating emissions, as well as a calculation that must be used to meet the material limits. The calculation doesn't limit actual material usage specifically, only that the amount of pollutants used in the calculation does not amount to emissions that are greater than 170 tpy.

Emissions data was requested for the time period of January 2023-June 2024 and were received timely. The highest 12-month rolling total VOC (isopentane) emissions occurred during the 12-month period ending in June 2024. The reported emissions for this period were 108.68 tons of VOC. The highest 12-month rolling total 1,1

difluoroethane emissions occurred during the 12-month period ending in October 2023. The reported emissions for this period were 1.40 tons of 1,1 difluoroethane. The data submitted indicates compliance with the permit limits.

Records of daily and monthly average isopentane content for thermoformed goods at extrusion, thermoformed finished goods, laminate stock at extrusion, and laminate stock finished goods were requested and reviewed. Based on the records provided, the facility is keeping track of the isopentane content of each product as part of the production records. During a video call with the facility, the information was reviewed, as the data is in a format too large to submit to AQD via email. This information is not used in the calculation, and a subset of the daily information was provided in PDF format and included with the records obtained during this inspection.

Records of daily and monthly average 1,1 difluoroethane content for laminate stock at extrusion and laminate stock finished goods were requested and reviewed. Based on the records provided, RL Adams is keeping track of the various 1,1 difluoroethane content of each product as part of the production records. During a video call with the facility, the information was reviewed, as the data is in a format too large to submit to AQD via email. This information is not used in the calculation, and a subset of the daily information was provided in PDF format and included with the records obtained during this inspection.

FGPROD&REGRIND is subject to a particulate matter (PM) hourly emission limit of 0.01 lbs per 1,000 lbs of exhaust gases, on a dry gas basis. This emission limit is for each of the associated baghouses and is met through satisfactory operation of each baghouse.

During the inspection, the EUREGRIND area was observed. This area is for reprocessing scrap materials from the thermoforming, laminator and reclaim lines. Each of the five baghouses were observed and additional information regarding them is listed below, along with on-site pressure drop gauge readings.

Dust Collector ID	Online / Offline (At time of inspection)	Operation Description	Pressure Drop Range	Pressure Drop Observed
Dust Collector # 1	Online	Laminator #1 and #2	1-3	1.5
Dust Collector # 2	Online	Reclaim line grinder	1-3	0
Dust Collector #3	Online	Brown* #1 and #2	1-8	1.0
Dust Collector #4	Online	Brown* # 3 and #4	1-8	0.5
Dust Collector #5	Online	Brown #5	1-8	0.5

*Brown = Thermoforming Line

Dust Collector # 1 was operational during the site visit and the magnehelic gauge had a pressure drop of 1.5" H_2O. Dust Collector #2 had a pressure drop of 0" H_2O. Dust Collector #3 had a pressure drop of 1.0" H_2O. Dust Collector #4 had a pressure drop of 0.5" H_2O, and Dust Collector #5 had a pressure drop of 0.5" H_2O. Several conversations about the low magnehelic readings have been had with the facility, and in the past resulted in a Violation Notice. RL Adams staff stated that after contacting the dust collectors' manufacturer, they learned that due to the type of process that these dust collectors are controlling the dust collectors will not produce a good enough cake on the bags to increase the pressure drop to what is considered a 'normal' value. To address the pressure drop issues, the company recently applied for and received a PTI to allow for the installation of broken bag detection systems for each baghouse however, the detectors have yet to be installed. This was further discussed with the company because the AQD has previously issued a Violation Notice for the low pressure drop readings, and part of the solution was identified as the installation of broken bag detection systems. We discussed that the facility should make this a priority to install the systems, and RL Adams will provide a timeframe for installation by the beginning of September 2024. Once the systems are installed, the facility will need to submit a minor modification to have the new PTI provisions incorporated into the ROP.

Summary

R.L. Adams appeared to be in compliance at the time of the inspection.

NAME April Lazzaro DATE 08/13/2024 SUPERVISOR