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

N722164264

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:** 07/28/2022
STAFF: Michael Cox	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Unannounced Inspection		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff Michael Cox (MTC) arrived at the R.L. Adams Plastics, Inc. (RL Adams) facility located at 5955 Crossroads Commerce Wyoming, MI 49519 at 9:00am on July 28, 2022, to complete a scheduled unannounced inspection. Prior to entering the facility offsite odors and visible emissions readings were completed. No odors or visible emissions were noted.

Facility Description

RL Adams is a foam product production facility. Products produced at the facility are mainly for food services, building products, as well as arts and crafts. The site currently is in operation with three shifts seven days a week. The facility is a major source of volatile organic compounds (VOCs) and is subject to the Title V program. The facility is in operation with Renewable Operating Permit (ROP) No. MI-ROP-N7221-2019a. Since the previous inspection conducted on July 13, 2021, permit to install (PTI) No. 247-02G was issued to the facility on June 21, 2022, to revise material limit calculations and VOC emissions, relocation of existing scrap pipes and dust collector distribution, change testing and sampling requirements, and to change the term "Platestock" to "Thermoformed" goods. After the issuance of PTI No. 247-02G, RL Adams submitted the proper forms for a Minor Modification to MI-ROP-N7221-2019a to roll PTI No. 247-02G into the ROP. No additional significant changes have occurred to the site since the last inspection.

Compliance Evaluation

Upon entering the site, AQD staff MTC met with Ms. Anette Arrieta, Industrial Engineer, who provided a walkthrough of the facility, answered site specific questions, and provided requested documents.

MI-ROP-N7221-2019a

FGPROD&REGRIND

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

The various stages of operations for 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-grinded 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 sheets are sent to either the thermoforming or lamination process areas.

During the inspection monitoring gauges were observed on all three extrusion machines. Each screen displayed the current lbs/hr of isopentane and hydrofluorocarbon 152a for that batch. This number is also inputted for each new batch of material being created. Based on the observations made, RL Adams appears to be adequately monitoring the isopentane and 1,1 difluoroethane usages.

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. Large amounts of grinded waste from the thermoforming lines were observed around the reclaim line. RL Adams' staff was observed cleaning up the grinded waste, which is done as needed. In the reclaim line the grinded material from the thermoforming lines is made back into pellets before being reused in the reclaim extruder at the start of the site process.

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 emission limits for VOCs and 1,1 difluoroethane of 170 tons per year (tpy) each, respectively, per a 12-month rolling total. These emission limits are calculated by using the following equations, which have been updated in PTI No. 247-02G and require that RL Adams keeps track of the components associated with each equation to demonstrate compliance with the limits.

For isopentane:

(ITSE + ILSE + IST + ISL + IETFG + IELFG) ≤ 340,000 pounds of isopentane per 12-month rolling time period as determined at the end of each month.

Where:

ITSE = Pounds of isopentane from Thermoformer Scrap generated at Extrusion.

ILSE = Pounds of isopentane from Lamination Scrap generated at Extrusion.

IST = Pounds of isopentane from Scrap generated at Thermoforming.

ISL = Pounds of isopentane from Scrap generated Lamination.

IETFG = Pounds of isopentane from Thermoformed Finished Goods

IELFG = Pounds of isopentane from Laminated Finished Goods

For 1,1 difluoroethane:

(DTSE + DLSE + DST + DSL + DETFG + DELFG) ≤ 340,000 pounds of 1,1 difluoroethane per 12-month rolling time period as determined at the end of each month

Where:

DTSE = Pounds of 1,1 difluoroethane from Thermoformer Scrap generated at Extrusion.

DLSE = Pounds of 1,1 difluoroethane from Lamination Scrap generated at Extrusion.

DST = Pounds of 1,1 difluoroethane from Scrap generated at Thermoforming.

DSL = Pounds of 1,1 difluoroethane from Scrap generated at Lamination.

DETFG = Pounds of 1,1 difluoroethane from Thermoformed Finished Goods

DELFG = Pounds of 1,1 difluoroethane from Laminated Finished Goods

After a review of the equations provided by RL Adams, it appears that the facility is adequately and accurately keeping track of Isopentane and 1,1 difluoroethane usage required.

Records of RL Adams emissions logs were requested and reviewed for the time period of July 2021 through June 2022. The highest monthly VOC emissions during the time period reviewed occurred during the month of May 2022 when 8.21 tons of VOC was emitted. The highest 12-consecutive month rolling total VOC emission occurred during the 12-month period ending in January 2022, when 86.75 tons of VOC was emitted, which is within the permitted limit. The highest monthly 1,1 difluoroethane emissions occurred during the month of May 2022, when 1.20 tons of 1,1 difluoroethane was emitted. The highest 12-consecutive month 1,1 difluoroethane emissions occurred during the 12-month period ending in June 2022 when 10.24 tons of 1,1 difluoroethane was emitted, which is within the permitted limit.

Monthly and 12-month rolling total usages of isopentane and 1,1 difluoroethane were requested as well as select daily usages for the time period of July 2021 through July 28, 2022. The highest monthly Isopentane usage occurred during the month March 2022, when 63,981 pounds of isopentane was used. The highest 12-consecutive month isopentane usage occurred during the period ending in June 2022, when 653,111 pounds of isopentane was used. The highest monthly 1,1 difluoroethane usage occurred during the month of May 2022, when 36,910 pounds of 1,1 difluoroethane was used. The highest 12-consecutive month 1,1 difluoroethane usage occurred during the 12-month period ending in June 2022, when 298,048 pounds of 1,1 difluoroethane was used. Based on the records reviewed, RL Adams is keeping track of their daily, monthly and 12-month rolling total isopentane and 1, 1 difluoroethane usages.

Monthly and 12-month rolling total production records for EUPRODUCTION were requested and reviewed for the time period of July 2021 through July 28, 2022. The highest monthly foam produced with isopentane occurred during the month of May 2022 when 1,315,387 pounds of foam was produced containing isopentane. The highest 12-consecutive month foam produced containing isopentane occurred during the 12-month period ending in June 2022 when 12,942,934 pounds of foam containing isopentane was produced. The highest monthly foam produced containing 1,1 difluoroethane occurred during the month of May 2022, when 612,893

pounds of foam containing 1,1 difluoroethane was produced. The highest 12-consecutive month of foam produced containing 1,1 difluoroethane occurred during the 12-month period ending in April 2022, when 6,303,875 pounds of foam containing 1,1 difluoroethane was produced. Based on the records reviewed, RL Adams is keeping track of their monthly and 12-month rolling total production records for EUPRODUCTION.

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, RL Adams is keeping track of the isopentane contents in each product.

Records of monthly and 12-month rolling totals of isopentane containing scrap processed by EUREGRIND were requested and reviewed for the time period of July 2021 through July 2022. The highest monthly total scrap processed containing isopentane occurred during the month of May 2022 when 322,301 pounds of scrap containing isopentane was processed. The highest 12-consecutive month total scrap processed containing isopentane occurred during the 12-month period ending in January 2022 when 3,288,209 pounds of scrap containing isopentane was processed. RL Adams is keeping track of records of scrap containing isopentane processed.

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 necessary.

Records of monthly and 12-month rolling totals of 1,1 difluoroethane containing scrap processed by EUREGRIND were requested and reviewed from July 2021 through July 28, 2022. The highest monthly total scrap processed containing 1,1 difluoroethane occurred during the month of January 2022 when 27,952 pounds of scrap containing 1,1 difluoroethane was processed by EUREGRIND. The highest 12-consecutive month total scrap processed containing 1,1 difluoroethane occurred during the 12-month period ending in June 2022 when 238,671 pounds of scrap containing 1,1 difluoroethane was processed by EUREGRIND. RL Adams is keeping track of records of scrap containing 1,1 difluoroethane processed.

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. Onsite observations and review of records of the baghouses are discussed further below.

During the inspection, the EUREGRIND area was observed. This area is for waste materials from the thermoforming, laminator and reclaim lines. Five dust collectors (baghouses) were observed and additional information regarding each dust collector is listed below, along with on-site magnehelic readings.

Dust Collector ID	Online / Offline (At time of inspection)	Operation Description	Magnehelic Range	Magnehelic Number Observed

Dust Collector # 1	Online	Laminator #1 and #2	1-3	1.0
Dust Collector # 2	Online	Reclaim line grinder	1-3	1.2
Dust Collector #3	Online	Brown #1 and #2	1-8	0.75
Dust Collector #4	Online	Brown # 3 and #4	1-8	0.5
Dust Collector #5	Online	Brown #5	1-8	1

Brown = Thermoforming Line

Dust Collector # 1 was operational during the site visit and the magnehelic gauge appeared to be working normally. Dust Collector #2 had a magnehelic reading of 1.2 while the dust collector was in operation. Dust Collector #3 had a magnehelic reading of 0.75. Dust Collector #4 had a magnehelic reading of 0.5, and Dust Collector #5 had a magnehelic reading of 1.0. After a discussion of the lower magnehelic readings for Dust Collectors #3 and #4, RL Adams staff stated that after contacting the dust collectors' manufacturer, it was determined from the manufacturer 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. RL Adams staff stated that they were looking into alternative measures to ensure compliance since the pressure drop values for the baghouses are an on-going issue. A third-party vendor is contracted by RL Adams to provide preventative maintenance on the dust collectors. It was noted that the last two preventative maintenance activities occurred on October 17, 2021, and February 20, 2022. During the February 20, 2022, preventative maintenance checks, all dust collectors had their respective bags changed, leak tests performed, and fans balanced.

Daily pressure drop readings were requested for all five dust collectors from July 2021 through July 28, 2022. Upon review, daily pressure drop reading entries were recorded below 1" of water for Dust Collectors #3, #4, and #5 for the majority of the time period reviewed. Due to the on-going issues with maintaining pressure drops according to Manufacturer Specifications, RL Adams is seeking alternative measures to ensure compliance. As stated earlier, RL Adams' process does not produce enough cake to increase the pressure drop. MTC discussed with RL Adams staff the facility's need to pursue other options. RL Adams Staff stated that the company was looking into "bag break" or "bag leak" detectors as a way to ensure compliance, however the facility will likely need to submit a PTI application to modify the ROP. RL Adams staff is working on addressing these issues moving forward.

During the site inspection the rooftop was accessed, and the eleven stacks listed in MI-ROP-N7221-2019a were observed and appeared to be consistent with the ROP dimensions. Debris that was previously noted during the July 13, 2021, inspection

was noted to have been cleaned and no other debris was found to be around any of the stacks.

Conclusion

Based on the facility walkthrough, observations made, and records received, RL Adams appears to be in compliance with MI-ROP-N7221-2019a, PTI No. 247-02G, and all other applicable air quality rules.

NAME Michael T. Cox DATE 8/30/2022 SUPERVISOR