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

N722159360

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:** 07/13/2021
STAFF: Michael Cox	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On-site Unannounced Scheduled Inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff Michael Cox (MTC) and April Lazzaro (AL) arrived at the R.L. Adams Plastics, Inc. (RL Adams) facility located at 5955 Crossroads Commerce Wyoming, MI 49519 at 9:48am on July 13, 2021, to complete a scheduled unannounced inspection and to oversee a stack test being conducted on EUPRODUCTION. Prior to entering the facility offsite odors and visible emissions readings were completed. No odors or visible emissions were noted other than steam from the cooling tower on site.

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 February 20, 2019, permit to install (PTI) No. 77-19 for the correction of stack dimensions and permit to install (PTI) No. 247-02F for the installation of a new extrusion line were approved on May 22, 2019, and December 2, 2020, respectively. Both PTI No. 77-19 and PTI No. 247-02F have since then been rolled into ROP No. MI-ROP -N7221-2019a, and both PTI No. 77-19 and PTI No. 247-02F have been voided and reissued as Source-wide Permit to Install MI-PTI-N7221-2019a. No additional significant changes have occurred to the site since the last inspection.

Compliance Evaluation

Upon entering the site, AQD staff MTC and AL met with Ms. Anette Arrieta, Industrial Engineer, who provided a tour 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 currently. 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 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. Maintenance 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 and require that RL Adams keeps track of the components associated with each equation to demonstrate compliance with the limits. RL Adams has since come up with a different formula for calculating emissions than what is listed in ROP No. MI-ROP-N7221-2019a for facility ease. MTC recommended to RL Adams staff to contact the permitting section to incorporate the new "In-House" equations into a PTI if the equations are easier for the facility to use to keep track of emissions and are correct. After a review of the facility's "In-House" equations it appears that RL Adams is adequately and accurately keeping track of Isopentane and 1,1 difluoroethane emissions as required. The facility also provided Isopentane and 1,1 difluoroethane emissions using the existing formulas found in ROP No. MI-ROP-N7221-2019a which were reviewed for comparison and where data was derived for this inspection report. Below are the current ROP No. ROP-MI-N7221-2019a equations used to determine Isopentane and 1,1 difluoroethane emissions.

Isopentane

$(BA_P * S_P) + (BA_L * S_L) + ((BA_P - BG_P) * G_P) + ((BA_L - BG_L) * G_L) \leq 340{,}000$ pounds (170 tons) of isopentane per 12-month rolling time period.

Where:

BA_P = percent isopentane in plate stock at extrusion, in lbs/100 lbs of stock produced

S_P = scrap from plate production in lbs/month

BA_L = percent isopentane in laminate stock at extrusion, in lbs/100 lbs of stock produced

S_L = scrap from laminate production in lbs/month

BG_P = percent isopentane in plate stock finished goods, in lbs/100 lbs of stock produced

G_P = plate stock finished goods production in lbs/month

BG_L = percent isopentane in laminate stock finished goods, in lbs/100 lbs of stock produced

G_L = laminate stock finished goods production in lbs/month

1,1 difluoroethane

$(HA_L * X_L) + ((HA_L - HG_L) * Y_L) \leq 340{,}000$ pounds (170 tons) of 1,1 difluoroethane per 12-month rolling time period.

Where:

HA_L = percent 1,1 difluoroethane in laminate stock at extrusion, in lbs/100 lbs of stock produced

X_L = scrap from laminate production in lbs/month

HG_L = percent 1,1 difluoroethane in laminate stock finished goods, in lbs/100 lbs of stock produced

Y_L = laminate stock finished goods production in lbs/month

Records of RL Adams emissions logs were requested and reviewed for the time period of January 2019 through July 2021. The highest monthly VOC emissions during the time period reviewed occurred during the month of February 2019 when 14.8 tons of VOC was emitted. The highest 12-consecutive month rolling total VOC emission occurred during the 12-month period ending in December 2020, when 138.2 tons of VOC was emitted, which is within the permitted limit. The highest monthly 1,1 difluoroethane emissions occurred during the month of July 2020, when 4.4 tons of 1,1 difluoroethane was emitted. The highest 12-consecutive month 1,1 difluoroethane emissions occurred during the 12-month period ending in August 2019 when 17.4 tons of 1,1 difluoroethane was emitted, which is within the permitted limit.

A Violation Notice (VN) was issued to the facility on June 17, 2021, for the exceedance of the emission limit of 170 tpy per 12-month rolling total based on Isopentane retention being much lower in the final product than what historically has been claimed. Due to this VN, a stack test was conducted on July 13, 2021, by Montrose Air Quality Services to determine the VOC emissions coming from EUPODUCTION&REGRIND. The facility stated in the VN response that VOC emissions were not exceeded. Stack test results were submitted electronically to AQD on August 12, 2021 along with hard copies being mailed to the Division. The average VOC emission from the stack test results was noted to be 5.70 tpy from the stacks serving the three extruders. When the 5.70 tpy emissions value is added to the other process where emissions occur within the facility (Thermoforming, Laminate, and Regrind) it puts the facility emissions below the 170 tpy VOC limit specified in Special Condition I. 1.

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 January 2019 through July 2021. The highest monthly Isopentane usage occurred during the month of June 2020, when 83,237 pounds of isopentane was used. The highest 12-consecutive month isopentane usage occurred during the period ending in January 2021, when 802,532 pounds of isopentane was used. The highest monthly 1,1 difluoroethane usage occurred during the month of August 2020, when 34,128 pounds of 1,1 difluoroethane was used. The highest 12-consecutive month 1,1 difluoroethane usage occurred during the 12-month period ending in November 2019, when 295,090 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 January 2019 through July 2021. The highest monthly foam produced with isopentane occurred during the month of June 2020 when 1,690,843 pounds of foam was produced containing isopentane. The highest 12-consecutive month foam produced containing isopentane occurred during the 12-month period ending in November 2019 when 16,760,558 pounds of foam containing isopentane was produced. The highest monthly foam produced containing 1,1 difluoroethane occurred during the month of May 2021, when 798,899 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 May 2021, when 5,179,293 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 plate stock at extrusion, plate stock 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 January 2019 through July 2021. The highest monthly total scrap processed containing isopentane occurred during the month of February 2019 when 677,695 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 August 2019 when 6,580,225 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 January 2021 through July 2021. The highest monthly total scrap processed containing 1,1 difluoroethane occurred during the month of July 2020 when 125,607 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 August 2020 when 532,563 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	1.5
Dust Collector # 2	Online	Reclaim line grinder	1-3	0.0
Dust Collector #3	Offline	Brown #1 and #2	1-8	0.6
Dust Collector #4	Offline	Brown # 3 and #4	1-8	0.5
Dust Collector #5	Offline	Brown #5	1-8	0.5

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 0.0 while the dust collector was in operation. Dust Collector #3 had a magnehelic reading of 0.6. Dust Collector #4 had a magnehelic reading of 0.5, and Dust Collector #5 had a magnehelic reading of 0.5. MTC brought the low magnehelic readings to the attention of RL Adams staff. Maintenance staff with RL Admas attempted to fix the lines for the magnehelic gauge on Dust Collector #2 during the site visit but was unable to get a reading of greater than 0.0 inches of water. Daily pressure drop readings were requested for all five dust collectors from January 2020 through July 2021. Upon review, daily pressure drop reading entries were recorded at 0.0 for Dust Collector #2 and below 1" of water for Dust Collectors #3 and #5 for the majority of the time period reviewed (January 2020 through July 2021). These issues were discussed with RL staff. Manufacturer Specification for the proper range of pressure drops was requested to determine the reviewed pressure drop readings. In an email dated July 21, 2021, from RL Adams staff determined that Dust Collectors #1 and #2 have a pressure drop range of 1" to 3" of water, and Dust Collectors #3, #4, and #5 have a pressure drop range of 1" to 8" of water. After further

review, it was concluded that RL Adams was not complying with FGPROD&REGRIND, SC III.3 of ROP No. MI-ROP-N7221-2019a. Regarding the zero magnehelic gauge readings, RL Adams staff did not know the exact reasoning and had contacted the manufacturer to inspect the dust collectors. RL staff are 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. Debris was also noted to be around the stack serving the reclaim extruder and the stack serving Dust Collector #2. MTC recommended cleaning the debris around the stacks to better gauge the stacks in the future.

A return site visit was conducted on July 21, 2021, to obtain records and determine progress being made on the dust collectors. During the July 21, 2021, site visit, the debris around the stacks serving the reclaim extruder and Dust Collector #2 were cleaned. Manufacturers of the dust collectors were scheduled to visit the facility on July 28, 2021, to help the facility correct the issues discussed above. As of the July 21, 2021, site visit, RL Adams is making an expeditious attempt to correct the issues found with the dust collectors.

Conclusion

Based on the facility walkthrough, observations made, and records received, RL Adams appears to not be in compliance with MI-ROP-N7221-2019a and the applicable air quality rules. A violation notice (VN) will be sent for the following violation:

Upon review of requested daily pressure drop reading records for the five dust collectors, numerous daily records were below the manufacturer's specified pressure drop range. This is a violation of ROP No. MI-ROP-N7221-2019a, FGPROD&REGRIND, SC.III.3.

NAME Michael T. Cox DATE 8/17/2021 SUPERVISOR HH