

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

N694457205

| | | |
|---|--|----------------------------------|
| FACILITY: Pregis | | SRN / ID: N6944 |
| LOCATION: 2700 Wills Street, MARYSVILLE | | DISTRICT: Warren |
| CITY: MARYSVILLE | | COUNTY: SAINT CLAIR |
| CONTACT: Marsha Hicks , Environmental Health and Safety Coordinator | | ACTIVITY DATE: 02/10/2021 |
| STAFF: Kaitlyn Leffert | COMPLIANCE STATUS: Non Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: FY2021 Scheduled Inspection. Pregis was found to have exceeded the 8-hr VOC emission limit in January 2020. | | |
| RESOLVED COMPLAINTS: | | |

On February 10th, 2021, Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) staff Kaitlyn Leffert conducted a scheduled, on-site inspection of Pregis Marysville, located at 2700 Wills Street, Marysville, MI (SRN: N6944). The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the administrative rules; and Renewable Operating Permit (ROP) Number MI-ROP-N6944-2017.

Pregis Marysville is permitted to operate four extruders used for the manufacture of foam sheet rolls, as well as two reclaim extruders, which are used to recycle leftover foam. The foam products manufactured for the facility are used for a variety of purposes, including protective foam packaging and cushioning under floors. To produce the foam sheets, polyethylene and polymer beads are melted and blended, injected with the blowing agent, isobutane, and then pushed through the barrel under pressure to form the final foam product. Following extrusion, the foam is cut, sliced, and rolled before it is stored in the facility. Leftover foam product is re-melted, extruded, and cut into plastic beads that can be reused as feed stock in the foam manufacturing process.

The only VOC emitted by the foam manufacturing process is isobutane, which is released during manufacturing, cooling, and storage of the foam products. The facility is equipped with an Ionization Control System (ICS), which uses ion generators to reduce the isobutane molecules to carbon dioxide and water. The control operates building-wide and relies on the use of negative building pressure to ensure that isobutane released into the general plant environment goes through the ICS.

Pregis is currently operating under Renewal Operating Permit (ROP) number MI-ROP-N6944-2017 which expires January 25, 2022. Pregis' ROP is in the process of renewal. An administratively complete ROP application was submitted to EGLE, and a permit shield issued, on September 14, 2020. EGLE has not yet taken final action on this ROP renewal. If EGLE fails to take final action before January 25, 2022 the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. During this inspection, the compliance determination was made using the existing version of the ROP (MI-ROP-N6944-2017).

On-Site Inspection

I arrived at facility at approximately 9:10 am and was greeted by Marsha Hicks, EHS Coordinator, and John von Zellen, Environmental/Maintenance. We first had a brief conversation about the status of their ROP renewal and the purpose of my inspection. I asked about whether the plant had any changes in production or operating status over the past year due to the ongoing COVID-19 pandemic. I was informed that the facility had seen an increase in demand and that the extrusion process is now operating 24 hours per day, 7 days per week.

With an increase of online shopping and shipping activities over the past year, there has been a higher demand for packaging foam, which is one of the products manufactured at this facility.

On the day of my inspection, the plant was operating. During the facility walk through, I noted that extruder lines #1, #2, and #4 and one of the reclaim units was operating. Mr. Zellen informed me that line #3 was down due to issues with the blender and that parts would need to be ordered for it to be repaired. I also observed that the air intakes and ionization system appeared to be operating properly during my inspection. Pregis is required to maintain the same flow rate through the fans as was measured during their most recent compliance test. During the last visit to the facility, I was informed by facility staff that the flow rate is set in the system and never adjusted or changed. Throughout my inspection, I did not observe any instances of air escaping the plant environment through draft openings, such as doors or windows.

Following a tour of the main production area, we visited an adjacent room where the Compliance Assurance Monitoring System (CAMS) is located. I noted that the VOC emissions rate and concentration were 361 lb/hr and 218.2 ppm, respectively. In order to show satisfactory operation of the continuous monitoring system, Pregis is required conduct Relative Accuracy Test Audit (RATAs) once every two years. The monitoring system passed the last RATA test, which was conducted on July 10, 2019. The next RATA test is scheduled for July 14, 2021.

I also inspected the pyrolysis oven, which is in the same room as the emissions monitoring system. The pyrolysis oven is a burn-off oven used to clean parts from the extruders. The oven does not use fuels or combustion, but rather operates using high heat in a vacuum. The pyrolysis burn-off oven does vent to ambient air. The facility maintains an operation log for every time that the pyrolysis oven is operated. Based on the log, the oven was last operated in June 2020. Mr. Zellen informed me that due to the 24-hour operating schedule of the facility, there has not been time to clean the parts of the extruders and therefore the oven has been rarely used over the previous year.

The pyrolysis oven was first observed during my inspection in 2019 and was determined to be exempt, per Rule 291, due to the minimal amount of emissions expected. I requested that more information be provided on the expected emissions from the pyrolysis oven in order to confirm its exempt status. On April 20, 2021, Ms. Hicks provided a copy of an emissions report prepared by the manufacturer. A copy of this report is also attached to the paper copy of this report. The results of the air emissions testing completed by the manufacturer indicate hourly emission rates of 0.0016 lb/hr PM and 0.034 lb/hr VOC, when the oven is used for polyethylene materials. These values correspond to estimated annual emissions of 0.007 tpy PM and 0.15 tpy VOC if the oven were to be ran for 24 hours per day, 7 days/ week. These annual emission estimates are below the maximum potential emissions allowed by Rule 291 of 10 tpy PM and 5 tpy VOC. In addition, this level of operation for the oven is unlikely since the oven currently only operates for a few hours per year.

Rule 291 further specifies maximum annual emission limits for toxic compounds based on screening levels, with specific emission limits for toxic compounds with screening levels below 2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The emissions report identified the primary compounds emitted from the pyrolysis oven. I reviewed the list and found that many of the compounds emitted did not have a screening level and that the air contaminant emitted with the lowest screening level was 1-dodecene, which has a screening level of 29 $\mu\text{g}/\text{m}^3$. Based on the estimated emissions and identification of the emitted contaminants in the manufacturer's report, the pyrolysis oven appears to be exempt according to the requirements of Rule 291.

Records Review

Prior to my inspection, I had sent a list of all records that I would like to review and asked that they be compiled and ready on the day of my inspection. Pregis provided all of the requested records on the day of my inspection.

The permit requires records to be maintained of all daily, monthly, quarterly, semi-annual, and annual maintenance and inspections (SC VI.6). While at the facility, I was shown binders where these maintenance records and daily inspections records are maintained at the facility. The permit requires that the ionization control system be operated in a satisfactory manner according as specified in the facility's malfunction abatement plan (MAP) (S.C. IV.1). The MAP contains a list of parameters to be checked on a daily, monthly, and quarterly basis. Based on the records provided by the facility on the day of the inspection, these checks are being done as specified in the MAP.

In addition to the maintenance checks specified in the MAP, Pregis is required to conduct smoke tests every six months to verify that air is not escaping through any natural draft openings and to show that the non-fugitive enclosure is operating in a satisfactory manner (SC IV.2, V.1, VI.3). Since the VOC control is building wide, it is important that uncontrolled air is not escaping through any openings around the building. I was provided records of the smoke tests conducted in 2019 and 2020, which were conducted on January 7, 2019, June 28, 2019, September 1, 2019, November 20, 2019, May 12, 2020, and December 7, 2020. All tests indicated that pressure was maintained throughout the building. Based on the dates of the 2020 smoke tests, nearly seven months had passed between the smoke tests. I mentioned this to the facility and reminded them to make sure that the tests are conducted every six months, rather than just twice per year.

I was provided records of the amount of isobutane used on a daily, monthly, and 12-month rolling basis from the four extruders, as required by SC VI.5. The permit does contain any limits on the isobutane usage, but it is used as an input into the emission calculations.

Emissions Records

Pregis is required to maintain records of VOC emission calculations, both in pounds per 8-hour time period, as well as on a 12-month rolling basis (SC VI.2). I was also provided monthly and 12-month rolling emissions summaries for January 2019 – December 2020. Over the course of the previous two years, the 12-month rolling total VOC emissions ranged from approximately 111.6 to 137.7 tpy. The highest reported 12-month rolling total was at the end of December 2020. These values indicate compliance with the permitted VOC emission limit of 178.0 tpy (SC I.1).

The ROP also contains a facility-wide hourly VOC limit of 476 lbs per 8-hr period. Hourly emissions were provided on the day of the inspection for February 8th, 9th, and 10th. Eight-hour VOC emission rates are calculated based on these hourly emissions. The provided records indicate that VOC emissions ranged from around 230 lb/8-hr period to 350 lb/8-hr period.

In addition to the hourly records for the days leading up to the inspection, I also selected a few days to more closely review hourly emissions, based on when high total emissions or high maximum hourly emissions were observed. I reviewed hourly emissions data from October 26, 2019, January 8, 2020, July 1, 2020, and November 14, 2020. Of the days reviewed, October 2019 had the lowest hourly and 8-hour emissions rates, with rolling 8-hour emissions ranging from 103.7 to 252.9 lb/8-hr. January 8, 2020 had the highest hourly emissions of the dates reviewed, with 8-hour emissions ranging from 300.9 to 478.7 lb/8-hr period. The maximum 8-

hour emissions value on this day was above the VOC emission limit in the permit. The exceedance occurred at the 8-hour period ending at 5:00 pm. The 8-hour total emissions in the hour before and after that exceedance were 471.4 lbs/8-hr and 439.3 lb/8-hr, respectively. This deviation was not reported by the facility in the 1st Quarter or annual 2020 emissions reports.

Previous Violation

In early December 2020, I was notified of an hourly emissions exceedance due to improper function of the control equipment at Pregis. Based on hourly emissions records provided by the facility, the 8-hour emissions limit had been exceeded from 4 pm on December 6th through 9 am on December 7th. A violation notice was issued to Pregis on December 16, 2021 for exceedance of the 8-hour emission limit and for improper operation of the control equipment. On January 5th, 2021, EGLE received a response to the violation, which indicated that the fresh intakes had been shut off during production on December 6th through December 7th, resulting in excess emissions of VOCs. The violation response also included an updated Malfunction Abatement Plan (MAP), which now specifies checking that the fresh air intakes are on and operating to the list of daily system checks that are to be done by facility staff.

During this inspection, I gained more clarification regarding this event from Mr. Zellen and Ms. Hicks. Prior to the hourly emission exceedance, three of the fresh air intakes were shut off while the plant was doing inventory. Once production started up again, the fresh air intakes were not turned back on. These fresh air intakes are essential for proper function of the control equipment. Once the mistake was realized, production was immediately shut down so that the fresh air intakes could be turned back on. This production shut down is apparent the hourly emissions data, since hourly emissions suddenly dropped from 52.7 lb/hr to 29.8 lb/hr at 8:00 am on December 7th. Production resumed once the fresh air intakes were back up and running. The provided maintenance and inspection records indicated that staff were conducting the checks of the fresh air intakes as a part of their daily inspections.

Conclusion

Prior to this inspection, the facility was found to not be operating in compliance with MI-ROP-N6944-2017 due to improper function of the control equipment during operation of the extruder lines, which resulted in an exceedance of the 8-hr VOC emission limit from December 6th through December 7th of 2020. A violation notice was issued on December 16, 2020 and a response to that violation was received on January 5, 2021. While reviewing records collected during this inspection, it was identified that another violation of the 8-hour VOC emissions limit had occurred on January 8, 2020 with the 8-hour period ending at 5:00 pm. This exceedance indicates that the facility was not operating in compliance for the entirety of the compliance period. A violation notice will be issued to the facility for exceeding the 8-hr VOC emissions limit (FG-FACILITY, S.C. I.2).

NAME *Kaitlyn Jeffert*

DATE 05/25/2021

SUPERVISOR *K. Kelly*