

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

N179444084

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| FACILITY: Atlas EPS, a Division of Atlas Roofing Corp. | SRN / ID: N1794 |
| LOCATION: 8240 Byron Center Rd., BYRON CENTER | DISTRICT: Grand Rapids |
| CITY: BYRON CENTER | COUNTY: KENT |
| CONTACT: Jon Nelson , Accounting Manager | ACTIVITY DATE: 04/04/2018 |
| STAFF: Tyler Salamasick | COMPLIANCE STATUS: Non Compliance |
| SUBJECT: FY 2018 major source inspection | SOURCE CLASS: MAJOR |
| RESOLVED COMPLAINTS: | |

Background

Atlas EPS a division of Atlas Roofing Corporation (Atlas) SRN: N1794 is a polystyrene foam product manufacturer that specializes in manufacturing construction and insulation products. The production facility is located at 8240 Byron Center Road, Byron Center, Michigan 49315. Atlas is located in a primarily residential area with the nearest residential structures approximately 400 feet east and west of the facility and a school approximately 600 feet north of the facility. The facility was inspected on 4/4/2018 by Tyler Salamasick, Environmental Quality Analyst of the Michigan Department of Environmental Quality, Air Quality Division. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and Title V permit MI-ROP-N1794-2017.

Atlas is a major source of volatile organic compounds (VOCs). The facility's primary emission is pentane, which is used as a blowing agent in the polystyrene foam expansion process. The facility is subject to the Title V program as well as compliance assurance monitoring (CAM). Atlas uses a thermal oxidizer to control VOC emissions from the expander process. Atlas does not manufacture polystyrene. The polystyrene is received as unexpanded beads with pentane pre-entrained into the resin matrix. Atlas does not appear to be subject to the 40 Group IV Polymers and Resins: National Emission Standard for Hazardous Air Pollutants (NESHAP) because the facility does not manufacture polystyrene resin.

Inspection

Site arrival was at approximately 9:15 am on Wednesday 4/4/18. Prior to entering the site I made odor observation as well as visible emission observations and did not detect either. Upon arrival I met with Accounting Manager, Jon Nelson. I presented my State of Michigan identification card, informed the facility representative of the intent of my inspection and was permitted onto the site. Jon is responsible for maintaining the facility's emission records but also agreed to show me the facility's operations. Jon described the facility's processes and provided me with additional information about the facility.

Atlas normally operates 24 hours per day on Monday through Friday with occasional work on the weekend. The plant currently has approximately 150 employees. The facility is comprised of two adjacent buildings with a combined area of approximately 2,400 square feet.

Jon showed me the process in sequence, starting with where they receive the raw polystyrene beads. We walked through the facility to the shipping and receiving area. A large portion of the facility is used for storing the foam blocks. I observed some fume odors once I entered the production area and consistently through-out the rest of the inspection. Jon showed me the polystyrene bead receiving area. The facility receives large totes of pre-expanded beads and stations them prior to use.

After observing the receiving area, Jon took me to the maintenance room. We met with some maintenance staff who joined as we went to the bead expansion area. The facility has three bead expansion machines. Jon indicated that they normally run all three of the expansion processes but one of them was down at the time of the inspection. I observed one of the three expansion lines as it operated. Atlas uses steam to heat the polystyrene beads as they enter a large sealed mixing container. As the beads are heated they release a significant amount of pentane. Most of the pentane released from the entire process is off gassed at this point. The pentane is vented from the process to the thermal oxidizer. The thermal oxidizer is used to control the emissions of VOCs. The ROP requires that the control device is maintained in a manner that ensures a minimum VOC destruction efficiency of 95%. Stack testing conducted in 2017 indicated that the thermal oxidizer had a destruction efficiency of 99.23%.

Once the beads are expanded they are moved into very large totes. The facility stores the beads up to three days to allow for further off gassing. The residual pentane emissions from the bead storage appears to release into the in-plant environment.

When the beads are ready, the facility loads them into large rectangular molds. They use steam to heat the beads in the mold and fuse them together. The facility exhausts the excess steam from the molding through a stack in the roof. The blocks that are produced are relatively large. They roughly weigh a few hundred pounds and are approximately 25 feet long. Atlas uses these blocks as a stock material, that they will later cut into boards.

The next area I inspected was the processing area. The facility has multiple stations where the block can be cut or embossed. The facility uses heated wire to cut the block both vertically and horizontally. The sheets are then packaged and prepared to be shipped. Some of the cut sheets are then embossed. The embossing line uses a heated template that melts a pattern into the sheet. This process is externally vented.

After inspecting the facility's processes, I went outside to check the facility's control device. The device was operating at 1580F which is above the minimum temperature set by the permit. Atlas appeared to be properly operating the control device. After the inspection of the thermal oxidizer Atlas staff showed me records of inspections and maintenance of the device.

Regulatory analysis: MI-ROP-N1794-2017

The ROP incorporates the relevant regulations, permits and requirements related to Atlas's processes. The permit includes the following emission units and the associated flexible groups.

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|-------------------------|--|---|------------------------------|
| EUEXPANDER3 | Polystyrene expander with VOC emissions controlled by a shared thermal oxidizer | 08-01-1989 / NA | FGEPS |
| EUEXPANDER4 | Polystyrene expander with VOC emissions controlled by a shared thermal oxidizer | 06-01-1994 / 5-22-2008 | FGEPS |

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| EUEXPANDER5 | Hirsch Vacutrans Polystyrene expander with VOC emissions controlled by a shared thermal oxidizer | 07-01-2002 / 5-22-2008 | FGEPS |
| EUBAGAGING | Bag-aging area for EPS beads prior to molding | 09-27-1984 / NA | FGEPS |
| EUMOLD7 | Polystyrene molding machine | 01-01-2012 / NA | FGEPS |
| EUMOLD4 | Polystyrene molding machine | 05-01-1994 / 5-22-2008 | FGEPS |
| EUMOLD5 | Polystyrene molding machine | 08-01-1997 / 5-22-2008 | FGEPS |
| EUMOLD6 | Stand-alone polystyrene shape molding machine | 5-22-2008 /NA | FGEPS |
| EURTO | Thermal Oxidizer | 11-21-2011/ NA | FGEPS |
| EUCUTTING | Cutting lines, routers, granulators | 01-01-1980 / NA | FGRULE290 |
| EUEMBOSSING1 | Embossing line, where shapes or textures are burned into sheets of expanded polystyrene | 07-01-1987 / 07-01-1991 | FGRULE290 |
| EUEMBOSSING3 | Embossing line, where shapes or textures are burned into sheets of expanded polystyrene | 07-01-1987 / 07-01-1991 | FGRULE290 |
| EUEMBOSSING4 | Embossing line, where shapes or textures are burned into sheets of expanded polystyrene | 07-01-1987 / 07-01-1991 | FGRULE290 |

FGEPS

Flexible group FGEPS establishes limits and requirements for the polystyrene bead expansion, bead aging and molding operations along with the associated thermal oxidizer control device. The emission

units include EUEXPANDER3, EUEXPANDER4, EUEXPANDER5, EUBAGAGING, EUMOLD4, EUMOLD5, EUMOLD6, EUMOLD7 and EURTO.

The ROP limits VOC emissions from these processes to 272.4 lb/hour and 374.5 tons per year (tpy). The ROP stipulates that the 12 month VOC limit is based a provided equation (see permit).

Jon showed me the facility's spreadsheets and how they calculated their emissions. He also provided me with an electronic copy of the facility's records (see printed attachment). The records indicate that since 2014 the facility's highest monthly emissions per 12 month rolling time period was 250 tons of VOC reported for the month September in 2017. This is below the permit limit of 374.5 tons and appears to comply with the permit limits.

The facility's records indicated that the highest hourly emissions were on 12/17/2016 at 861.81 lb/hour. This exceeds the facility's 272.4 lb/hour limit by greater than three times. The facility's records indicate that they exceeded the hourly permit limit five times since the last inspection in 2016. The exceedances occurred on 12/3/2016, 12/17/2016, 12/24/2016, 1/21/2017 and 7/9/2017. These exceedances are violations of FGEPS Special Condition I.1 for the hourly VOC emission limit.

The ROP establishes operational restrictions associated with the molding equipment and the thermal oxidizer. Atlas is required to immediately stop the addition of feed material to the expanders, consistent with safe operating procedures, if the thermal oxidizer is by passed. The permit also requires that the permittee does not restart the process until the thermal oxidizer is online and functioning properly. The maintenance staff indicated that the thermal oxidizer is equipped with alarms that signal if maintenance is needed. If they engage the bypass they stop adding material to the line.

The permittee is limited to not operate more than four (4) block mold machines at any given time. At the time of my inspection the facility was only running 3 molds and the staff indicated that they normally operate four. The facility only has three block molds and one shape mold.

Atlas's permit also requires that they shall not operate the thermal oxidizer unless it is operating under negative pressure. The maintenance personnel informed me that the equipment is equipped with a sensor that indicates if the equipment is not drawing air through properly. I did not observe the pressure readings, though I did note that it was addressed in the maintenance records.

Jon provided me with records of the thermal oxidizer operating temperatures. The records indicate that the thermal oxidizer normally operates at approximately 1600F. The data suggests that the temperature did drop below the 1340F requirement, though it appears that the thermal oxidizer was shut down for maintenance, or because it was not needed due to no production. The temperature records appeared to be consistent with the emissions records as well as the maintenance records.

The permit requires that the thermal oxidizer is equipped with a continuous temperature indicator device. I observed the thermal oxidizer temperature reading during my inspection and it appears to be consistent with previous inspections and records.

Atlas is required to determine the VOC content, as received and as shipped, of product from FGEPS. The permittee can use sampling and analysis methods approved by the AQD District Supervisor. An approved analysis may include, but is not limited to, a Certificate of Analysis obtained from the manufacturer for every batch received. Atlas currently uses the manufacturers Certificate of Analysis

to determine their VOC content (see attached record). The analysis indicates a 3.53% pentane content. This is consistent with the facility's records which indicate the beads have between 3-7% pentane content.

The permit requires that Atlas maintain various production and operational records. This includes recording the daily hours of operation for the EPS process. I observed the facility's records and they included the facility's hours of operation. In addition to tracking the hours operated the facility is required to record the monthly throughput for pre-expansion at each lot of EPS beads. The facility maintains production and operational records.

They are also required to maintain records of maintenance. I observed the facility's records and they appear to adequately include the facility's scheduled and unscheduled maintenance. The records included the weekly inspection checklist.

FGRULE290

Flexible group FG290 establishes limits and requirements for emission units that emit air contaminants and are exempt from the requirements of Rule 201 pursuant to Rules 278 and 290. These emission units include EUCUTTING, EUEMBOSSING1, EUEMBOSSING3 and EUEMBOSSING4. The emission unit EUCUTTING includes the cutting and shaping of foam products. EUEMBOSSING1, EUEMBOSSING3 and EUEMBOSSING4 involve heating and imprinting shapes on the sheets of cut foam board. Jon provided emission records for exempt processes. The records indicated that the primary air contaminant is pentane and that no month's emissions exceeded 500 pounds per month.

The permit requires that the following information is recorded for each emission unit

- Records identifying each air contaminant that is emitted.
- Records identifying if each air contaminant is controlled or uncontrolled.
- Records identifying if each air contaminant is either carcinogenic or non-carcinogenic.
- Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(a)(ii) and (iii).
- Material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this table and Rule 290.

The facility's records do not currently include all of this information and should be reformatted to better reflect the requirements of the permit.

The FG290 flexible group also requires that Atlas maintains an inventory of each emission unit that is exempt pursuant to Rule 290. The inventory is required to include the following information.
A written description of each emission unit as it is maintained and operated throughout the life of the emission unit.

For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall maintain a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate.

The provided records identify emissions based upon customer name. The records should be updated to better reflect the requirements of the permit.

ROP Annual and Semiannual Report Certification

Atlas EPS submitted their 2017 annual and semiannual compliance certification stating that the facility

was in compliance with all terms and conditions contained in the ROP between the dates of 1/24/2017 and 12/31/2017. The report did not certify compliance for the dates of 1/1/2017 through 1/23/2017. The certification did not identify the emission exceedances that occurred on 1/21/2017 and 7/9/2017. Atlas' 2016 reports also failed to identify the emissions exceedances for the year of 2016 on the dates of 12/3/2016, 12/17/2016 and 12/24/2016. This is a violation of the reporting requirements under Special Condition VII.2 and 3 of the facility's renewable operating permit (MI-ROP-N1794-2017).

Conclusion

It appears that Atlas is in violation of SC 1.I for hourly emissions of VOCs. Atlas is in violation of Special Condition VII.2 and 3 for failing to report the exceedances and indicating compliance with the ROP. The facility will be issued a violation notice (VN). Atlas appears to be in compliance with the other requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and MI-ROP-N1794-2017.

NAME



DATE

5/3/2018

SUPERVISOR

