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

N082438054		
FACILITY: PLASCORE INC		SRN / ID: N0824
LOCATION: 615 N FAIRVIEW ST, ZEELAND		DISTRICT: Grand Rapids
CITY: ZEELAND		COUNTY: OTTAWA
CONTACT: Ed Weller , Facilities Manager		ACTIVITY DATE: 12/20/2016
STAFF: Kaitlyn DeVries	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: The purpose of this inspection was to determine compliance with PTI No. 72-98I and all other applicable air quality rules and		
regulations.		х
RESOLVED COMPLAINTS:	·	

On Tuesday December 20, 2016 AQD staff Kaitlyn DeVries (KD) conducted an unannounced, scheduled inspection of Plascore, Inc. located at 615 N. Fairview St, 500, and 581 East Roosevelt Avenue, Zeeland, Michigan. The purpose of this inspection was to determine compliance with PTI No. 72-98I and all other applicable air quality rules and regulations.

# **Facility Description**

Plascore, Inc. (Plascore) is a manufacturer of light weight "honeycomb" shaped material that is placed in between boards to create a rigid panel that is subsequently used in a variety of applications. The honeycomb material can be created from aluminum, stainless steel, Nomex, or plastic. Other exempt operations are also located on site and will be described in further detail below.

Plascore consists of four (4) facilities; one is located on Fairview St, and the three (3) others are located on East Roosevelt. On December 20, 2016 the Fairview St. facility was inspected. The Roosevelt facilities were inspected on January 5, 2017. Details for the split inspection will be discussed below.

# **Regulatory Analysis**

Plascore is a synthetic minor source of Volatile Organic Compounds (VOC's) and Hazardous Air Pollutants (HAP's). Plascore currently only holds one (1) Opt-Out permit, PTI No. 72-98I, which was most recently revised in August, 2016.

# **Compliance Evaluation**

## FGFAIRVIEW

This flexible group consists of three (3) print lines (EUPRINT01, EUPRINT02, and EUPRINT04) and one (1) clean line (EUCLEAN03) controlled by Oxidizer #6, or Oxidizer #4. Oxidizer #4 is planning on being relocated to the Roosevelt facility in the future, but per Mr. Weller, there is no set date for this occurring.

Print lines 1, 2, and 4 are web printing lines which apply adhesive in either diagonal or horizontal stripes across substrates of aluminum foil, stainless steel foil, Nomex paper, Kevlar paper, or other types of paper webs. After the adhesive is applied to the substrate, it is cured in a continuous feed oven that is headed with electric infrared heaters and a hot oil coil heat exchanger in a recirculated hot air convection oven. The VOC emissions are controlled by an oxidizer, as previously mentioned.

Clean Line #3 is an aluminum/stainless steel foil web cleaning line that cleans and coats the metal foils with a water-based non-VOC based cleaner. After cleaning, the foil is coated with either a water-based or a solvent-based coating. Then, the substrate is cured in a natural gas fired oven. Emissions from this process are also controlled by an oxidizer.

All three (3) print lines were operating at the time of the inspection and were running aluminum foil. All containers, including waste containers, appeared to be properly closed and stored. All of the lines are equipped with rollers for application of the adhesive, and the cure ovens appeared to be properly operating. The cure oven for the clean line was running at a temperature of 450°F and -0.3" WC, which indicates that the dryer was operating at a pressure lower than the adjacent areas so air is flowing into the dryer.

Oxidizer #6 (11,000 CFM) was running at the time of the inspection, and was undergoing the required Destruction Efficiency (DE) testing. No official results are in yet, but the preliminary results point to compliance with the required 95% minimum DE. The combustion chambers of the RTO were operating at temperatures fluctuating between 1530°F and 1570°F, which is above the required minimum temperature of 1500°F. Records for Oxidizer #6 also indicate the RTO normally operating above the required 1500°F. At the end of the three (3) runs, during the final post calibrations the RTO went down, which stopped all of the lines from running. Thus, KD was able to witness the interlocking system for the dryers. Annual test results for the interlock systems are conducted, with the most recent inspection for Oxidizer #4 (3,500 CFM) being conducted in December 2015.

At that point Mr. Weller's attention was required to address the RTO issue so KD decided to inspect the remainder of the facility on a different date. It appears as if water leaked into the conduit of the RTO control panel, thus creating the issue. Per conversations with Mr. Weller on January 5, 2017, this issue has been addressed and fixed.

Plascore recently submitted an updated Malfunction Abatement Plan (MAP) (received 12/09/2016). Plascore conducts all regular preventative maintenance (PM) on the oxidizers, as required as part of the malfunction abatement plan (MAP). Records of the most recent PM are attached to this report.

VOC emissions are limited to 20.0 tons per year (tpy), 12-month rolling. As of December 2016, the 12-month rolling VOC emissions are less than 5 tpy. Isopropyl alcohol emissions are limited to 125.956 pounds per day (lb./day). Over the past 12-months the highest daily emissions of Isopropyl alcohol were in July, 2016 with daily averages around 2.0 lb./day. Formaldehyde emissions are limited to 167.84 pounds per year (lb./yr), 12-month rolling. As of December 2016, Formaldehyde emissions were 7.40 lb./yr, 12-month rolling. Records also indicate that Plascore is properly tracking the gallons of each material being used and reclaimed, the VOC content, Formaldehyde content and Isopropyl alcohol content of each product used and reclaimed. Plascore utilizes manufacturers' formulation data to determine the VOC content, and the records are acceptable.

Stack dimensions, while not explicitly measured, appeared to be of the correct dimensions.

#### FGROOSEVELT

This flexible group includes the Nomex process (EUNOMEX) and one (1) print line (EUPRINT03) controlled by Oxidizer #2 (8,000 CFM), Oxidizer #3, or Oxidizer #5. Oxidizer

#4 may also be used after the relocation from the Fairview facility.

Print Line #3 is a web printing line that applies adhesive across a substrate of aluminum foil, stainless steel foil, Nomex paper, Kevlar paper, or other types of paper webs. After the adhesive is applied, it is cured in a continuous feed electric infrared heated oven. VOC emissions are controlled by Oxidizer #2, Oxidizer #3, or Oxidizer #5. Oxidizer #4 may also be used, after the relocation from the Fairview facility. After relocation, no more than this print line may be exhausted to Oxidizer #4.

The Nomex process involves secondary processing after the paper substrate has been formed into a honeycomb. The honeycomb block is dipped into a phenolic resin solution that is housed in one of the three (3) dip tanks. The block is then dried in one of the three (3) devolatilizing rooms. After the block is dried, it is placed into one of six (6) cure ovens. Emissions from all of these processes are controlled by one of the oxidizers. Additionally, no more than one line in EUNOMEX and EUPRINT03 may be exhausted any one of the oxidizers at one time. Per Mr. Weller, they have dampers throughout the ductwork in order to control which oxidizer the emissions are exhausted to.

Print Line #3 was operating at the time of the inspection and was running one of the papers. All containers, including waste containers, appeared to be properly closed and stored. The line is equipped with rollers for application of the adhesive, and the cure ovens appeared to be properly operating at negative pressure. PM records indicate that the most recent PM's were conducted in September 2016, including testing of the interlock systems. As previously mentioned, an updated MAP was received by AQD in December 2016, and all requirements of the MAP appear to be met.

Most recent stack testing for Oxidizers #2, and #5 was done in February, 2014. At the time of testing, PTI No. 72-98G had pound per hour (pph) limits, for which test results were acceptable. PTI No. 72-98I now requires destruction efficiency testing, at AQD's request. No additional testing has been requested at this time. At the time of the inspection, the oxidizers were running at temperatures of 1562°F, 1614°F, and 1621°F. Temperature records, for all three (3) oxidizers, indicate they are operated well above the minimum 1500°F requirement, at a range of 1570°F - 1650°F, depending on the oxidizer. Temperature records are attached to this report.

VOC emissions are limited to 50.0 tpy, 12-month rolling. As of December, 2016 the 12-month rolling VOC emissions were 38.21 tpy. Isopropyl alcohol emissions are limited to 267.87 Ib./day. Over the past 12-months the highest daily emissions were in July, 2016 at 232.99 Ib./day. Formaldehyde emissions are limited to 1851.65 Ib./yr, 12-month rolling. As of December, 2016 Formaldehyde emissions were 557.06 Ib./yr. Records also indicate that Plascore is properly tracking the gallons of each material being used and reclaimed, the VOC content, Formaldehyde content and Isopropyl alcohol content of each product used and reclaimed. Plascore utilizes manufacturers' formulation data to determine the VOC content, and the records are acceptable.

Stack dimensions, while not explicitly measured, appeared to be of the correct dimensions.

## FGFACILITY

This flexible group covers all process equipment source-wide including equipment covered by

other permits, grand-fathered equipment and exempt equipment.

Per the attached records, Plascore appears to be properly tracking VOC and HAP emission rates as well as the gallons of each material used, VOC and HAP content of each material used and reclaimed. VOC emissions from the facility are limited to 89.0 tpy, and as of December 2016 the 12-month rolling VOC emissions were 43.12 tpy. HAP's are individually limited to 9.0 tpy and aggregately limited to 22.5 tpy, both 12-month rolling. As of December 2016, the aggregate HAP emissions were 12.25 tpy and 6.16 tpy individually, with Phenol being the HAP emitted most. Formaldehyde emissions are limited to 2,018.4 lb./yr, 12-month rolling. As of December 2016 Formaldehyde emissions were 564.46 lb./yr (0.28 tpy). Records are attached to this report.

#### Miscellaneous Exempt Emission Units

The Fairview facility also housed one (1) powder coating line and associated cure oven. This line is exempt from Rule 201 permitting under Rule 287(d) and was not in operation during the time of the inspection. Several CNC stations, and common internally vented baghouse, are also housed here. This is exempt from Rule 201 permitting under Rule 285(l)(vi)(B). One (1) paint booth is also located in the Fairview facility. Per Mr. Weller, this booth will use 50 gallons per month at the most. KD could see the tracking spreadsheet next to the booth. Usage records (attached) indicate 57.435 gallons was used in October 2016, which had the highest usage for any month in 2016. The filters appeared to be properly installed and maintained, and per Mr. Weller are changed on an as needed basis. This booth is exempt from Rule 287(c). Finally, this facility has one caustic bath and associated water rinse baths that are exhausted externally. This process is exempt from Rule 201 permitting under Rule 285(l)(iii).

Building A, of the two (2) buildings located at 500 East Roosevelt primarily houses the permitted processes, but does have six (6) sawing stations where the honeycomb blocks are cut into the correct size. All of the sawing stations are exhausted to one of two pulse-jet baghouses which are then externally exhausted. This process is exempt from Rule 201 permitting under Rule 285(I)(vi)(C).

Building C, the other building located at 500 East Roosevelt, has two (2) plastic extrusion lines; one is polypropylene and one is polycarbonate plastics. These lines are exempt from Rule 201 permitting under Rule 286(a). There is also a laminating station, that is exempt from Rule 201 permitting under Rule 286(d) and two (2) natural gas ovens that are exempt under Rule 282(b)(i). Lastly, there are some sawing stations that are controlled by dust collectors and exhausted to the in-plant environment. These sawing stations are exempt from Rule 201 permitting under Rule 285(I)(vi)(B).

The 581 Roosevelt facility has two (2) CNC routers, which are exempt from Rule 201 permitting under Rule 285(I)(vi)(B), one (1) natural gas cure oven, which is exempt from Rule 201 permitting under Rule 282(b)(i), and a phosphoric acid anodizing line with an associated cooling tower. The anodizing line is exempt from Rule 201 permitting under Rule 285(r)(vii) and the cooling towers exempt under Rule 280(d).

The 2015 MAERS data was reviewed as part of this full compliance evaluation, and appear to be consistent with what was reported in the attached records.

# **Compliance Determination**

Based on the observations made during the inspection and a subsequent review of the records, it appears as if Plascore, Inc. is in compliance with PTI No. 72-98I and all other applicable air quality rules and regulations.

DATE 1/6/2017

SUPERVISOR

NAME KAUTHAN