

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

P020462623

FACILITY: PREFIX CORPORATION		SRN / ID: P0204
LOCATION: 1601 W HAMLIN RD, ROCHESTER HLS		DISTRICT: Warren
CITY: ROCHESTER HLS		COUNTY: OAKLAND
CONTACT: Ken Siuda , Corporate Facilities Manager		ACTIVITY DATE: 01/20/2022
STAFF: Adam Bogнар	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On January 20, 2022, Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division (EGLE-AQD) Staff Adam Bogнар conducted a targeted inspection of Prefix Corporation (the “facility” or “Prefix”) located at 1601 & 1300 West Hamlin Road, Rochester Hills, MI 48309. 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); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules; and Permit to Install Nos. 73-15 and 68-15.

Contact: Kenneth J. Siuda, Environmental Manager

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I requested records electronically from Mr. Ken Siuda on January 12, 2022. Prefix’s consultant, Mr. Pete Romzick (Pete.Romzick@ghd.com) provided me the requested records via email. I reviewed records from January 1, 2020 through December 31, 2021. These records can be accessed on the AQD shared drive at the following address: S:\Air Quality Division\STAFF\Bogнар, Adam\Inspection Documents\Prefix June 2021

I arrived at the facility at around 10 am. I met with Mr. Ken Siuda, Facilities Manager and Mr. Pete Romzick, Consultant (GHD). I identified myself and stated the purpose of the inspection.

Inspection

Prefix has been in business at this location for almost 40 years. There are approximately 100 employees operating Monday through Friday (sometimes Saturday) from 6 am to 5 pm. In general, that business includes engineering prototypes and designs for the automotive industry.

Equipment/processes at this facility include 3 downdraft coating booths, a preparation/sanding area, 13 CNC machines, a plastic film thermoforming process, an adhesive/resin application area, a silicone mold making area, two 3D printers, two SLA machines, a cold cleaner, and various cutting/sawing/drilling operations.

Permit to install No. 68-15 (general permit)

This permit was issued in April 2015 to cover three downdraft coating booths located at this facility. There are two coating booths (#1 & #2) at 1601 West Hamlin and one coating booth (#3) at 1300 West Hamlin.

FG-COATING

Section I – SC (Special Condition) 1&2: Limits VOC emissions from each coating line to 2000 lb/month and 10 ton/year. Prefix maintains records of the daily, monthly, and 12-month rolling VOC emissions from each coating booth. The amount of paint used is automatically logged by a software that communicates with the paint mixer scale. This software creates a daily emissions spreadsheet which is used to calculate monthly and 12-month rolling VOC emission totals.

Booth 1: VOC emissions were reported highest during the month of May 2021 at 348.8 lbs. The 12-month rolling period with the highest reported emissions was December 2021 at 1.57 tons.

Booth 2: VOC emissions were reported highest during the month of June 2021 at 1,221.7 lbs. The 12-month rolling period with the highest reported emissions was December 2021 at 4.62 tons.

Booth 3: VOC emissions were reported highest during the month of December 2020 at 350 lbs. The 12-month rolling period with the highest reported emissions was December 2020 at 0.908 tons.

Section III – SC 1: Requires Prefix to capture all purge/clean-up solvents and waste coatings, store them in closed containers, and dispose of them according to state/federal regulations. Prefix does not reclaim any waste materials currently. Any waste solvents and coatings are put into sealed drums located near each booth. These drums are hauled away by a hazardous waste disposal company.

Section IV – SC 1: Requires Prefix to equip each coating booth with HVLP spray applicators. All paint applicators at Prefix are HVLP. Pressure caps for pressure testing the HVLP applicators are shared between this facility and the sister Prefix facility at 3500 Joslyn Road, Auburn Hills, MI. Mr. Siuda stated that the pressure caps were at the sister facility at the time of this inspection.

Section IV – SC 2: States that Prefix shall not operate any spray application unless the booth dry exhaust filters are installed, maintained, and operated in a satisfactory manner. I verified that filters were in place in booths 1, 2, and 3. The filters appeared to fit snugly over the exhaust port. There was not excessive overspray on the filters. Mr. Siuda stated that each booth filter is changed every week.

Section V – SC 1: States that EPA Method 24 testing is required if requested by the AQD. EPA Method 24 tests for the VOC content of a coating/solvent. AQD is not requesting that Prefix perform any Method 24 testing at this time. Prefix maintains manufacturers information for all chemicals and coatings used at the facility. This manufacturers information includes VOC/HAP content.

Mr. Romzick provided me with the SDS for the top three most used coatings and the most used reducer in 2021. The most used coating is URETHANE CLEAR which consists of 4.03 lb/gallon VOC with xylenes being the largest chemical component. Around 654.2 gallons of URATHENE CLEAR were used in 2021. The most used reducer is DT895 Hot Temperature Reducer which consists of 7.00 lb/gallon VOC with ethyl 3-ethoxypropanoate as the largest chemical component.

Section VI – SC 3: Specifies recordkeeping requirements for FG-COATING. Prefix must keep records of purchase orders/invoices for all coatings, reducers, and purge/clean-up solvents. These records were made available to me during my inspection. I reviewed purchase records for all thinner and solvent purchases made in 2021. 11 drums of thinner, 12 five-gallon pails of methanol, 3 five-gallon pails of PREPSOL, and 3 drums of acetone were purchased in 2021. The amount of solvents purchased accounts for approximately 2.4 tons of VOC, which appears to make sense when compared to the reported 6.49 tons of total VOC emitted in 2021. I did not review individual paint purchases.

Section VI – SC 4: Requires Prefix to maintain a current manufacturer's listing of the chemical composition of each coating used at the facility. These records are maintained digitally at the facility in the form of technical, environmental, and safety datasheets.

Section VIII – SC 1: Specifies stack dimension requirements. I did not verify stack dimensions during this inspection. The stacks on this building appear to be 1.5x the building height. Previous AQD inspectors have verified this with Prefix. No new stacks have been installed in recent years.

Section IX – SC 1: States that the permittee shall not replace or modify any portion of FG-COATING unless they submit a Process Information form to AQD, continue to meet all permit requirements, and maintain records of the date and description of modification.

Prefix submitted a process modification form on October 4, 2021 notifying AQD that they are installing an oven in the front of BOOTH 1. All equipment at this facility will be moved to 1400 S Livernois in the near future. Prefix has applied for new permits for the equipment at this new location.

FG-SOURCE

Section I – Special Condition 1: Limits source-wide VOC emissions to 30 TPY based on a 12-month rolling basis. The records I reviewed show that Prefix complies with this limit. The 12-month period with the highest facility-wide emissions was December 2021 at 6.49 tons. Emissions at this facility are showing a clear trend upwards over the past two years. VOC emissions were 0.21 tons during the 12-month period ending in January 2020; and 2.18 tons in December 2020.

Section VI – Special Condition 1: States that Prefix shall keep facility-wide VOC mass emission calculations on a monthly and 12-month rolling basis. These records are maintained.

Permit to Install No. 73-15

FGFACILITY

Section I – SC 1,2: Limits HAP emissions to less than 9 tons per year for each individual HAP and 22.5 tons per year for aggregate HAPs. Prefix meets these emission limits based on the records I reviewed. Aggregate HAP emissions were highest during the 12-month period ending in December 2021 at 3.47 tons. The highest individual HAP emission during December 2021 was xylenes at 1.12 tons.

Section V – SC 1: States that Prefix must use manufacturer's formulation data to determine HAP content of any material used at the facility. Prefix maintains manufacturer's formulation data and uses this data to compute individual HAP emissions from each coating at the facility. AQD is not requesting EPA Method 311 testing at this time.

Section VI – SC 1,2: Specifies recordkeeping requirements for FGFACILITY. Prefix must keep records of the gallons/pounds of each HAP containing material used, the HAP content of that material, and any reclaimed HAP material.

Prefix maintains these records. Prefix maintains records of the amount of each HAP containing material used each month for each booth. These calculations include the purge/clean-up solvent used in each booth. These monthly booth spreadsheets are summed to calculate facilitywide emissions.

Prefix does not reclaim any HAP containing material at this facility.

Sandblasters

There are two sandblaster units at 1300 West Hamlin that are exhausted to a dedicated dust collection system on each unit. These appear to be exempt from obtaining a PTI pursuant to Rule 285(2)(l)(vi)(B).

CNC Machines

There are 14 total CNC machines located at 1300 West Hamlin. These are used to cut plastic, steel, and aluminum. Four of these are large enough to accommodate an entire vehicle. All CNC machines at this facility are exhausted to a common dust collector and then to the general in-plant environment. These CNC machines appear to be exempt from obtaining a PTI pursuant to Rule 285(2)(l)(vi)(B).

Mold Making Process

There is a silicone mold making process located at 1300 West Hamlin. This operation consists of pouring a silicon rubber compound into various small molds and letting it cure for 12-24 hours. There is a Part A and Part B (catalyst) to the mold mixture. The mixture is applied at a ratio of 10 parts Part A to 1 part Part B. I collected safety data sheets and technical data sheets for these compounds. The compounds contain no HAPs. Octamethylcyclotetrasiloxane is the only compound noted in the safety data sheets. I do not expect this process to create air emissions based on my research.

Paint Kitchen + Cold Cleaner

There is a cold cleaner in the paint kitchen at 1601 West Hamlin used to clean paint guns. The gun cleaner uses "Super 16 Paint Gun Cleaner". According to the certified product data sheet this gun cleaner contains 90% VOC and 61.1% HAPs by weight (48% toluene). This amounted to 420 lbs of VOC and 300 lbs of HAPs during all of 2021. These emissions are accounted for in the facility 12-month rolling VOC & HAP totals.

The gun cleaner was equipped with a tray for draining parts and had a freeboard ratio greater than 0.7. The unit is equipped with a cover which was closed during this inspection. Proper operating instructions were posted visibly near the cold cleaner. The air/vapor interface of this cold cleaner was approximately 5 square feet. This cold cleaner appears to be exempt from Rule 201 requirements pursuant to Rule 281(2)(h) since it has an air/vapor interface less than 10 square feet. The paint kitchen area appeared to be well organized with no open containers of fresh/used coatings.

Adhesive Application

There is an adhesive application area used for various adhesive applications on automotive parts. The amount of adhesive used in this process is occasionally greater than 2 gallons/day. The highest usage was in February 2021 at 132 gallons. There are six months where 0 gallons were used. Usage appears to be intermittent.

The adhesive contains methylenediphenyl diisocyanate (MDI) at a 70% concentration. The majority of this compound will undergo a chemical reaction to form a polyurethane adhesive. Some amount of this compound will evaporate. Pete Romzick submitted a calculation sheet indicating that this process is exempt under Rule 290. Based on my review of this calculation, this process appears to be exempt pursuant to Rule 290 (2)(a)(ii)(B). Total MDI emissions for 2021 are estimated at 0.0000175 lbs.

The calculation was performed using a free-to-use software which uses EPA AP-42 calculations to estimate MDI emissions from adhesive application based on the estimated surface area of adhesive application, temperature, MDI concentration, and operating time. This tool is available at <https://www.americanchemistry.com/industry-groups/diisocyanates-dii/resources/mdi-emissions-estimator>.

Fiberglass Resin Application

This process is used on carbon fiber parts to create a laminate finish. An operator paints this onto parts in a large room. Emissions are exhausted to the general in-plant environment. There is a two part epoxy used to achieve this laminate finish. I collected safety data sheets for this epoxy. Neither part of the epoxy has any HAPs. Both products state that they contain 0% volatiles. Records provided to me show that a total of 28 gallons of resin were used in 2021. This process appears to be exempt from Rule 201 requirements pursuant to Rule 287(2)(a).

3D Printers

There are four 3D printer type devices used for rapid prototyping purposes. These are essentially plastic extrusion units. These devices appear to be exempt from Rule 201 requirements pursuant to Rule 286(2)(a).

Plastic Thermoforming

There is one plastic thermoforming station used to form plastic parts using heat and applied pressure. There is a large hood for this process to catch any emissions and ventilate them outdoors. This equipment appears to be exempt from Rule 201 requirements pursuant to Rule 286(2)(d).

Prep Deck

There is a prep deck used for miscellaneous cutting and sanding operations. Emissions from this deck go through a fabric filter in the floor and out a stack. The filter was very dirty during this inspection and there was a tear in one corner. I informed Ken Siuda that this filter needs to be in place with no tears when being used to exhaust particulate matter. Ken had an employee replace the filter during this inspection. I asked Ken how often he thinks this filter should be changed. Ken stated that monthly filter changes make sense for this specific process. I asked Ken to provide me with pictures showing monthly filter changes for the next 6 months. I have received two

of these updates so far. AQD will use enforcement discretion and not issue a violation notice for this tear in the filter. This process appears to be exempt from Rule 201 requirements pursuant to Rule 285(2)(l)(vi)(C).

I left the facility at around 12:30 pm.

Compliance Determination

This facility is not operating in compliance with Rule 201 requirements. The facility operated miscellaneous grinding operations on a prep deck which was exhausted through a broken filter. Prefix fixed the filter before I left the facility. At AQD discretion, a violation notice was not issued for this non-compliance. The facility now operates this prep deck pursuant to AQD Rule 285(2)(l)(vi)(C) by venting external emissions through an appropriately designed and operated fabric filter collector.

Prefix appears to be in compliance with all other AQD rules.

NAME Adam Bogner

DATE 4/19/2022

SUPERVISOR K. Kelly