

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

N584871236

FACILITY: PREFIX CORPORATION		SRN / ID: N5848
LOCATION: 1400 S LIVERNOIS, ROCHESTER HLS		DISTRICT: Warren
CITY: ROCHESTER HLS		COUNTY: OAKLAND
CONTACT: Ken Siuda ,		ACTIVITY DATE: 03/07/2024
STAFF: Adam Bognar	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On March 7, 2024, Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division (EGLE-AQD) Staff Adam Bognar conducted a targeted inspection of Prefix Corporation (the “facility” or “Prefix”) located at 1400 S Livernois, 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. 20-22 and 18-22

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Contact: Pete Romzick, Consultant

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I arrived at the facility at around 11 am. I met with Ken Siuda and Pete Romzick. Ken gave me a tour of the facility.

Inspection

There are approximately 240 employees operating Monday through Friday (sometimes Saturday) from 8 am to 5 pm. In general, this business includes engineering prototypes and designs for the automotive industry.

Equipment/processes at this facility include 4 downdraft coating booths, eight “prep decks” used for sanding/priming, 10 CNC machines, a plastic film thermoforming process, an adhesive/resin application area, a silicone mold making area, cold cleaners, several small sandblasting units, and various cutting/sawing/drilling operations.

Permit to install No. 20-22 (general permit)

This permit was issued in February 2022 for the downdraft coating booths located at this facility. There are 4 coating booths and 8 “prep decks” used at this facility. Both the coating booths and prep decks are considered downdraft coating booths. The prep decks are used for sanding, cleaning, and sometimes applying primer paint. The prep decks are equipped with fabric filters for particulate control. The coating booths are labeled 1 through 4 and the prep decks are labeled A through H.

Prefix provided me with the required records on the date of the inspection. I reviewed records from May 2023 (month of last inspection) through February 2024. These records can be accessed on the AQD shared drive at the following address: S:\Air Quality Division\STAFF\Adam Bognar\Inspection Documents\Prefix N5848 2024

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. I spot checked these calculations and found that daily usage (in gallons) is multiplied by the correct VOC content (in lb/gallon) to calculate VOC emissions. Daily VOC emissions are summed to calculate the monthly total VOC emissions, which are summed into 12-month rolling VOC emissions for each booth.

Booth 1: VOC emissions were reported highest during the month of May 2023 at 248.2 lbs. Annual VOC emissions were reported highest during the 12-month period ending in May 2023 at 3.18 tons.

Booth 2: VOC emissions were reported highest during the month of May 2023 at 371 lbs. Annual VOC emissions were reported highest during the 12-month period ending in May 2023 at 1.43 tons.

Booth 3: VOC emissions were reported highest during the month of November 2023 at 270 lbs. Annual VOC emissions were reported highest during the 12-month period ending in May 2023 at 1.16 tons.

Booth 4: VOC emissions were reported highest during the month of January 2024 at 45 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.0597 tons.

Booth A: VOC emissions were reported highest during the month of February 2024 at 52.6 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.1063 tons.

Booth B: VOC emissions were reported highest during the month of January 2024 at 145.6 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.2569 tons.

Booth C: VOC emissions were reported highest during the month of August 2023 at 69.8 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.2664 tons.

Booth D: VOC emissions were reported highest during the month of November 2023 at 14.8 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.0373 tons.

Booth E: VOC emissions were reported highest during the month of September 2023 at 25.2 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.0603 tons.

Booth F: VOC emissions were reported highest during the month of September 2023 at 33.2 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.0533 tons.

Booth G: VOC emissions were reported highest during the month of December 2023 at 145.2 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.3198 tons.

Booth H: VOC emissions were reported highest during the month of December 2023 at 14.8 lbs. Annual VOC emissions were reported highest during the 12-month period ending in February 2024 at 0.0368 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. Ken stated that all paint applicators at this Prefix location are HVLP. The guns I observed looked to be HVLP guns/equipment. I did not check for pressure test caps during 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 all booths and prep decks. The filters appeared to fit snugly over the exhaust port. There was not excessive overspray on

the filters. Ken stated that each booth filter is generally changed every week. Filter changes are tracked on a log near the booth.

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.

Section VI – SC 3: Specifies recordkeeping requirements for FG-COATING. Prefix must keep records of the VOC content of each coating or solvent used, the gallons of each coating or solvent used, monthly VOC emission calculations based on the amount of coating or solvent used, and 12-month rolling VOC emission calculations based on monthly VOC data. I verified that these records are maintained. I did not review purchase orders and invoices for coatings during this inspection.

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.

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 the modification.

Prefix submitted a process modification form on December 15, 2022 notifying AQD that they are installing an additional coating booth. This brought the total number of booths from 11 to 12.

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 May 2023 at 6.13 tons.

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. 18-22

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 May 2023 at 3.06 tons. The highest individual HAP emission was Xylene during the 12-month period ending in May 2023 at 0.96 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 facility-wide emissions.

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

Sandblasters

There are several sandblaster units that are exhausted to a dedicated dust collection system on each unit. Based on my observations during this inspection, these units are exempt from the requirement to obtain a PTI pursuant to Rule 285(2)(l)(vi)(B).

CNC Machines

There are 10 CNC machines along with various cutting/machining tools at this facility. These are used to cut plastic, steel, and aluminum. Four of the CNC machines are large enough to accommodate an entire vehicle. I observed that all CNC machines are hooked up to a dust collection system. This dust collector is exhausted to the general in-plant environment. Based on my observations during this inspection, these machines are exempt from the requirement to obtain a PTI pursuant to Rule 285(2)(l)(vi)(B).

Welding Station

There is a welding station equipped with a fume hood (exhausted outdoors). This equipment was leftover from the previous building tenants. An employee at Prefix stated that the welding machine is occasionally used for facility maintenance. Based on my observations and conversation with this employee, this welding station is exempt from Rule 201 requirements pursuant to Rule 285(2)(i).

Mold Making Process

There is a silicone mold making process located upstairs at the facility. 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. During a previous inspection, 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. Octamethylcyclotetrasiloxane has an initial threshold screening level (ITSL) of 75 micrograms/cubic meter (annual basis). During a previous inspection, Prefix submitted records for all of 2021 showing that the total amount of Part A and Part B purchased in 2021 was 1,320 gallons, or 10,584 lbs. The max concentration of octamethylcyclotetrasiloxane is 1% in the products. Going forward, AQD will require Prefix to maintain Rule 290 records for this mold making process.

If all the octamethylcyclotetrasiloxane in this material was volatilized and emitted a total of 105 pounds would be released to the environment. It is likely that much less than this will be emitted since the majority of it is intended to be bound up as part of the cured product. Based on my review of this usage data, emissions will be less than 1000 pounds per month and this process is exempt from Rule 201 requirements pursuant to Rule 290.

Paint Kitchen + Cold Cleaner

There are 2 cold cleaners at this facility 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 482 lbs of VOC and 347 lbs of HAPs during all of 2023. 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. 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. Proper operating instructions were posted visibly near the cold cleaner.

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 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. MDI has an ITSL of 0.6 micrograms/cubic meter, which corresponds to a Rule 290 limit of 20 lbs/month. Based on my review of this calculation, this process appears to be exempt pursuant to Rule 290 (2)(a)(ii)(B). Total MDI emissions were reported highest during the month of January 2024 at 0.00000092 lbs.

The calculation was performed using a free-to-use software from the American Chemistry Council which uses EPA AP-42 equations to estimate MDI emissions from adhesive application based on the process temperature, MDI concentration, area of coverage, operating time, and air flow speed.

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 in the SDS; however, it is possible that some amount of this material will be emitted. Prefix provided me with records showing that total resin usage is less than 200 gallons per month. Based on the information I have on this process, this process is exempt from Rule 201 requirements pursuant to Rule 287(2)(c). Usage was reported highest in July 2023 at 88 gallons.

3D Printers

There are four 3D printer type devices used for rapid prototyping purposes. These are essentially plastic extrusion units. Based on my observations during this inspection, these devices are 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. Based on my observations during this inspection, this device is exempt from Rule 201 requirements pursuant to Rule 286(2)(d).

I left the facility at around 12 pm.

Compliance Determination

Based on my inspection and record review, this facility is operating in 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. 20-22 and 18-22.

NAME Adam Bognar

DATE 5/24/2024

SUPERVISOR K. Kelly