

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

N599574376

FACILITY: INDUSTRIAL METAL CLEANING		SRN / ID: N5995
LOCATION: 1165 N GATEWAY BLVD, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Jason Meekhof , Production Supervisor		ACTIVITY DATE: 10/10/2024
STAFF: Scott Evans	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: On-site inspection to assess permit and air quality rules and regulations compliance.		
RESOLVED COMPLAINTS:		

Introduction

On October 10, 2024, State of Michigan Department of Environment, Great Lakes, and Energy Air Quality Division staff members Scott Evans (SE) and Alicia Kusaka (AK) conducted an on-site inspection of the Industrial Metal Cleaning facility located at 1165 N Gateway Blvd. in Muskegon, Michigan, to assess compliance with the conditions outlined in Permit to Install (PTI) No. 396-96, PTI No. 88-11, and all other applicable air quality regulations. This facility cleans and prepares various metal components for use by other facilities through various means including use of multiple burn-off ovens. These components are primarily automotive in nature but can include other products as well. This facility is currently classified as an EPA Class minor facility.

On October 2, 2024, a complaint was received regarding black smoke being emitted from one of the burnoff oven stacks. The opacity reportedly lasted roughly one hour, during which black smoke was seen continuously being released through the stack. Photographic evidence was provided. This was discussed with the facility during this inspection and the results of this discussion are entered alongside the relevant equipment and permit conditions below.

Inspection

During an initial perimeter observation of the facility there were no noticeable odors or visible emissions coming from the facility. Upon entering the facility and after an initial discussion regarding the intent of the visit, an inspection of the facility ensued. During the inspection the warehouse, oven room, and roof were visited. During this inspection the facility was examined for compliance with PTI No. 396-96, PTI No. 88-11, and all other applicable air quality regulations.

PTI No. 396-96

This permit was issued in October of 1996. It includes 6 special conditions for four of the five ovens located at the facility.

Special condition 13 requires that visible emissions from each of the four permitted ovens not exceed 10% opacity. During the inspection no opacity was observed either from ground level or while on the roof of the facility, although visible emissions from one burnoff oven were reported on October 2.

Special condition 14 requires that each oven be equipped with an oven temperature monitor. During the inspection it was observed that all four ovens had temperature gages on each unit's primary and secondary chamber, as well as a digital readout that feeds directly into the digital monitoring and recordkeeping system. During the inspection all gages were functioning and appeared to be calibrated properly.

Special condition 15 requires that each oven only operate when the afterburner is at a minimum temperature of 1400°F for a minimum retention time of 0.5 seconds. During the inspection, one afterburner was reading 1364°F. This oven was in the process of being brought online for the first time that day and was not actively being used for any burning during the inspection. The temperature was re-checked later at the end of the inspection and it was higher than before, indicating that the temperature was climbing to appropriate levels. All other ovens were reading at 1426°F or higher within the secondary afterburner chamber during the inspection.

Special condition 16 requires that collected ash from oven operation be disposed of in a manner that minimizes introduction of ash into outside ambient air. During the inspection waste removal was discussed. It was explained by GC that ash is removed by spraying water over a collection chamber. The water collects in the chamber and ash percolates out of the water, which is then drained to the waste-water system. The settled ash is then shoveled into waste disposal containers.

Special condition 17 requires that exhaust gases from the ovens be released from a stack with a maximum diameter of 12 inches and minimum height of 26 feet above ground level. During the inspection all four stacks were observed from the roof. No fallout or other residue was seen while on the roof. Though they were not measured directly, upon observation each appeared to meet the requirements of the permit.

Special condition 18 requires that each oven not exceed a maximum input heat as listed below:

- PTR-340 (1145) primary and secondary burners at 0.2 MMBTU/hr each.
- PTR-340 (1602) primary and secondary burners at 0.2 MMBTU/hr each.
- PTR-391 (3468) primary and secondary burners at 0.4 MMBTU/hr each.
- PRC-549 primary and secondary burners at 0.5 MMBTU/hr each.

During the inspection all ovens appeared to meet these requirements and were properly maintained so as to be operating as required.

During the inspection, the issue of observed visible emissions was discussed. Facility staff had been unaware of the incident and were concerned about the timing. During standard operation, the ovens are in the process of heating up during the morning hours when the smoke was observed, suggesting that no material was being burned at the time of the smoke. Facility staff retrieved records of temperatures and maintenance of that morning during the inspection to assess possible causes. Through the records retrieved, it was determined that one of the ovens had undergone maintenance prior to operation that morning. Additionally, it could be seen on temperature log records that a temperature spike occurred, with the afterburner temperature peaking at over 1800° F. When temperatures exceed 1800°F in the afterburner chamber, an automatic shutdown and cooldown system is activated for equipment and employee safety. This causes the temperatures in the afterburner to drop rapidly. However, this does not necessarily translate to a similar drop in oven temperature depending on how the system is designed. This means that it is possible that the automatic cooldown of the afterburner resulted in a period of improper function until either the oven cooled to below combustion temperatures, or the afterburner reheated back to proper operational temperatures. This period of mismatched temperature settings could be the source of smoke as observed by the complainant.

The facility staff were advised to keep closer watch on equipment to make sure such events do not occur in the future. Because the safety mechanisms appear to have operated appropriately and because the staff were able to review records to determine that the cause was something not likely to occur again on any regular basis, no violation notice will be issued at this time. The facility has been advised that future incidents may result in issuance of a violation notice. The facility has since installed a camera so that continuous monitoring of the stacks can be done remotely to further prevent any issues of prolonged or excessive smoke.

PTI No. 88-11

This permit was issued in September of 2011. It includes special conditions applied to one emission unit: EUBURNOFF. This emission unit is a burnoff oven used for cleaning of components. Its model number is PTR-549. It has an afterburner control system installed as a pollution control measure.

The permit has one emission limit applied to the unit, which states that no visible emissions may be released by the unit. During the inspection no VEs were observed from afar nor while observing the stacks from the roof of the facility.

The permit has two material limits applied to the unit:

- Only natural gas may be used as fuel.
- Only cured paints, oil, or grease on metal components may be processed by the oven.

During this inspection these requirements were discussed, and it was confirmed that only natural gas was used to operate the unit. It was also discussed what materials are cleaned and removed in the oven and observations confirmed that only approved items were being processed.

The permit has two operational restrictions applied to the unit:

- Rubber, plastics, uncured paints, or materials containing sulfurs or halogens (with a few exceptions) may not be burned in the oven.
- PCB-containing dielectric fluid, wire or parts coated with lead or rubber, or any waste materials such as paint sludge or waste powder coatings may be burned off in the oven.

During the inspection these items were discussed and reviewed with the facility as well as procedures to ensure no such items are placed into the ovens by mistake. It was confirmed that these requirements are being met through proper vetting of materials being burned by getting material compositions either from clients providing material for burning or through individual research into substances.

The permit has four design and equipment parameters applied to the unit:

- The oven may only run if the afterburner is properly installed and operated at a minimum of 1400°F.
- The unit may only operate if a temperature control system is installed and functional.
- The unit may only operate if an interlock system is installed and functional to shut off the primary chamber in the event of secondary chamber malfunction.
- A continuous temperature monitor must be installed and functional on the unit.

During the inspection all control equipment was adequately installed and operational. The secondary chamber was operating at over 1500°F during the inspection as displayed by two separate temperature gages.

The permit requires that the following records be maintained for the unit:

- The primary and secondary chamber thermocouples must be calibrated annually.
- Temperature records for both chambers must be maintained.
- Records of any malfunction must be maintained.
- Manufacturer data of all substances being entered into the unit must be retained.

During the inspection records were reviewed on site. The facility maintains an automatic digital temperature log that monitors continuously. This system works for all five ovens on site, not just the oven subject to this PTI. These records show continuous graphs that can be reviewed for multiple years of historic data. This analysis showed that all ovens are consistently maintained at temperatures above 1400°F while in use, with dips only occurring when oven doors are opened to safely load the next charge in. Samples of data for each oven over the month of November 2021 so far were obtained to demonstrate how the records are kept. These records are attached to this report. All records for multiple years prior can be provided to the AQD upon request.

This unit has one associated stack that is required to have a maximum diameter of 14 inches and a minimum height of 30 feet above ground level. The stack was not measured but visual observations seem to confirm that the stack was appropriately sized.

Exempt Equipment

The facility has multiple machining operations and pieces of equipment including media and shot blasting as well as a vibratory finisher, all internally vented. This equipment appeared to be exempt from air permitting requirements by Rule 285(2)(l)(vi)(B).

The facility also has two metal pickling lines that are used as part of the production process. These pickling lines include 10% Phosphoric Acid, Neutralizer, Rust Inhibitor, and Water tanks. All tanks are approximately 2,000 gallons in volume. These processes appear to be exempt from air permitting requirements by Rule 285(2)(r)(ii).

Conclusion

At the conclusion of the inspection, the facility appeared to be compliant with PTI No. 396-96, PTI No. 88-11, and all other applicable air quality regulations.

NAME Scott Evans

DATE 11/6/2024

SUPERVISOR 