

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

M422757038

FACILITY: West Michigan Crematory		SRN / ID: M4227
LOCATION: 1600 CRESTON ST, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: John King , Vice President		ACTIVITY DATE: 12/08/2020
STAFF: Scott Evans	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: An off site inspection conducted to assess compliance with Air Quality Regulations, PTI No. 152-11A, and PTI No. 149-16.		
RESOLVED COMPLAINTS:		

Introduction

On December 8, 2020, Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff Scott Evans (SE) conducted a virtual inspection of West Michigan Crematory, located at 1600 Creston St. in Muskegon, MI. This inspection was conducted via Microsoft Teams utilizing a portable camera on the part of staff at the facility so that equipment could be viewed, and discussions could be had remotely, in order to meet safety recommendations during the ongoing COVID-19 pandemic. Photos of equipment were also provided by the facility and will be attached to this report.

This was an announced inspection due to it being a virtual inspection conducted via video conferencing for safety during the ongoing COVID-19 pandemic. At the agreed upon time, SE and facility Vice President John King (JK) logged on to the Microsoft Teams meeting to begin the inspection. Though direct assessment of odors or visible emissions could not be assessed by SE at the time of the virtual inspection, assessment of visible emissions was conducted at a later date as described below. The facility is a crematory that cremates human remains exclusively for funeral and burial purposes. During discussions it was confirmed that the facility had historically explored expanding to the cremation of animal remains but had never moved forward with the idea. The facility currently has two active Permits to Install (PTI): PTI No. 152-11A and PTI No. 149-16.

PTI No. 152-11A

This permit encompasses two emission units:

- EU001 – Natural gas fired Matthews cremation unit; primary chamber burner rating is 0.7 MMBtu/hr; secondary chamber burner rating is 1.2 MMBtu/hr.
- EU003 – Natural gas fired Matthews cremation unit; primary chamber burner rating is 0.7 MMBtu/hr; secondary chamber burner rating is 1.2 MMBtu/hr.

Both units are included in the FG-INCINERATORS flexible group.

FG-INCINERATORS

This flexible group, as stated above, includes EU001 and EU003

This flexible group has one emission limit and three material limits, as listed below:

- 0.20 lb of Particulate matter (PM) / 1,000 lbs of gas
- Incinerators may only burn waste classified as Pathological Wastes as defined by 40 CFR 60.51c
- Each incinerator may not burn more than 750 lbs per charge

- Only natural gas may be used as fuel for each incinerator.

Records demonstrating compliance with the emission limit, content of waste, and amount of waste per charge are discussed below. The facility confirmed that all units operate on natural gas.

This flexible group has two operational restrictions and two design parameters, as listed below:

- Incinerators shall only combust waste when a temperature of at least 1600°F and a minimum retention time of 1 second in the secondary combustion chambers are maintained.
- Incinerators shall be installed completely and properly before operation.
- Incinerators shall each be equipped with functioning temperature monitors.
- The facility shall have operational scales for weighing charges prior to burning.

During the remote inspection, there were burns currently being run that JK was able to show SE live by bringing the portable camera to the units. Through the camera, SE could confirm that the units were installed properly, that temperature monitors were active, and showing proper temperatures within the secondary chamber of at least 1600°F for multiple seconds each. JK was also able to show SE two weighing devices, one being a scale installed in the floor and the other being a cart with a scale installed on the table upon which the remains are placed. Records demonstrating temperature monitoring during each burn are discussed below.

The facility is required to maintain the following records for FG-INCINERATORS:

- Continuous temperature monitoring of the secondary combustion chambers for each incinerator.
- Daily records of burn duration, description, and weight of waste combusted.
- Temperature records of secondary combustion chambers for each incinerator.
- Record of all maintenance conducted on the incinerators (outlined in Appendix A of the PTI).

Upon request, the facility provided digital records so that they could be reviewed by SE remotely. There were delays in getting these records to the AQD office, but these delays will not be considered non-compliance as the first attempt to provide records occurred only a couple days after the inspection, but continued technological challenges combined with holiday time off necessitated the sending of a USB flash drive with the records via mail that did not arrive until January of 2021.

Temperature recordings for each unit are continuously monitored and recorded on circular disk graphs. Though the facility could provide the required disks dating back for multiple years, only copies from November through December 8, 2020 were requested by SE in digital format (via photos of the disks) for detailed review. Detailed review of these disks confirmed that all burns occurred with afterburner temperatures above 1600°F before the charge is added and with a consistent temperature being held at approximately 1700°F and that each burn occurred over approximately 1.5 hours.

Similarly, the description and weight of each burn was recorded on paper in a logbook. For the same reasons as stated above for the temperature and duration records, only November through December 8, 2020 records were requested by SE for detailed review. Upon review, it could be seen

that all charges burned were well below the 750 lbs limit as discussed above, with only three charges exceeding 300 lbs and all three of those being under 500 lbs.

During the inspection maintenance procedures were discussed. All machines were relatively new and had not had any recent major maintenance. Because the equipment was operational during the inspection and records reflected proper function without any lapses or discrepancies, detailed records via Appendix A were not required by SE.

The records provided above will be retained confidentially within AQD records and not included directly with this report due to personally identifying information of the deceased and their families inherent in their nature.

Two stacks are associated with each of the two incineration units included in the flexible group. These stacks were not directly assessed during the virtual inspection but were observed at a later date as described below.

PTI No. 149-16

This permit discusses one emission unit and no flexible groups. The single emission unit is identified as EU004 and includes a single Matthews International, natural gas fired incinerator.

EU004

The emission unit has one associated emission limit: 0.20 lbs of PM / 1,000 lbs of gas corrected to 50% excess air. The emission unit also has three associated material limits:

- Only pathological wastes as defined in New Source Performance Standard (NSPS) 40 CFR 60.51c may be burned in the incinerator.
- The unit may not be charged with more than 750 lbs at once.
- Only natural gas may be used to operate the emission unit.

Records demonstrating compliance with the emission limit, content of waste, and amount of waste per charge are discussed below. Discussions with the facility and notes from original permitting process confirm that the emission unit operates on natural gas, as required.

This emission unit has two operational restrictions and three design parameters, as outlined below:

- The emission unit may only operate if a minimum temperature of 1600°F with a minimum retention time of 1 second in the secondary combustion chamber is maintained.
- The incinerator must be maintained in good, operational condition.
- The incinerator can only operate if the secondary combustion chamber is in good condition.
- A continuous temperature monitor must be installed and functional on the incinerator.
- A scale must be maintained and used on site to weigh charges before incineration.

During the virtual inspection it was observed that all equipment was in operational condition as the unit was in use and operating at approximately 1700°F. A continuous temperature monitor was installed and operational (records of historic burns are discussed below). The facility also had two scales on site, as discussed above, that service all incinerators within both permits.

The facility is required to maintain the following records regarding EU004:

- Temperatures of the emission unit shall be monitored and recorded continuously.
- Daily records of burn time and charge descriptions.
- All maintenance records for the emission unit as outlined in Appendix A of the PTI.

Upon request, the facility provided digital records so that they could be reviewed by SE remotely. There were delays in getting these records to the AQD office, but these delays will not be considered non-compliance as the first attempt to provide records occurred only a couple days after the inspection, but continued technological challenges combined with holiday time off necessitated the sending of a USB flash drive with the records via mail that did not arrive until January of 2021.

Temperature recordings for the secondary combustion chamber for the unit are continuously monitored and recorded on spinning disk graphs. Though the facility could provide the required disks dating back for multiple years only copies from November 2020 and December 2020 up to the inspection date were requested by SE in digital format (via photos of the disks) for detailed review. Detailed review of these disks confirmed that all burns occurred with temperatures in the secondary chamber being above 1600°F before the charges were entered and a consistent temperature being held at approximately 1700°F and that each burn occurred over approximately 1.5 hours.

Similarly, the description and weight of each burn was recorded on paper in a logbook. For the same reasons as stated above for the temperature and duration records, only November 2020 and December 2020 records were requested by SE for detailed review. Upon review, it could be seen that all charges burned were well below the 750 lbs limit as discussed above, with only three charges exceeding 300 lbs and all three of those being under 500 lbs.

During the inspection maintenance procedures were discussed. All machines were relatively new and had not had any recent major maintenance. Because the equipment was operational during the inspection and records reflected proper function without any lapses or discrepancies detailed records via Appendix A were not required by SE to limit the time-consuming process of photocopying more paper records for mailing.

The emission unit has one stack that services the entire facility. This stack was viewed on 2/19/2021. The stack was not measured, however it appeared to match the specifications outlined in the permit.

Other Items

The facility is a small facility that has no on-site boilers or generators. No other equipment requiring permitting or demonstration of exemption was observed during the inspection.

On-Site Stack Observations on February 19, 2021

Observations of the facility stacks were made on February 19, 2021 to identify any visible emissions. At the time of observation it could be seen that at least one incinerator was operating as

noticeable levels of heat were exiting one stack. Only one stack at the facility was noticeably in use at that time. No visible emissions were coming from the stack during this observation.

Conclusions

Upon conclusion of the off-site inspection and records review, the facility appeared to be compliant with PTI No. 152-11A, PTI No. 149-16, and all other applicable air regulations.

NAME Scott EvansDATE 2/25/2021SUPERVISOR AA