

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

N737172956

FACILITY: PENINSULA PRODUCTS INC.		SRN / ID: N7371
LOCATION: 54385 CEMETERY RD., LAKE LINDEN		DISTRICT: Marquette
CITY: LAKE LINDEN		COUNTY: HOUGHTON
CONTACT: Jason Sedar , Owner		ACTIVITY DATE: 06/20/2024
STAFF: Joe Scanlan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced inspection to determine compliance with PTI No. 149-04 and PTI No. 134-23.		
RESOLVED COMPLAINTS:		

REGULATORY AUTHORITY

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

FACILITY DESCRIPTION

Peninsula Products is located in Lake Linden, Houghton County, in a rural area north of downtown. The facility consists of one building. The company offers concrete burial vaults for sale and provides cremation services (operating as Valley North Crematory Inc.). Peninsula Products operates two crematory units permitted under PTI No. 149-04 and PTI No. 134-23.

PROCESS DESCRIPTION

A crematory furnace is typically a single cremation chamber and a secondary afterburner chamber and is used to incinerate human remains, including casket material typically made of wood or cardboard. The body is prepared by removing medical devices such as prostheses, implants, and pacemakers, as well as jewelry.

Combustion occurs in two stages: primary combustion burns off tissue, organs, body fat, and some container materials as gases, then secondary combustion continues to work on the remaining inorganic particles, usually from the container. The temperature of the afterburner (secondary combustion) is continuously monitored and recorded via a thermocouple and controlled at temperature set points. The gases discharge through a stack, and after about 2–3 hours the cremation process is complete, leaving behind a fine gravel-like substance that weighs around 3–9 pounds. Emissions are mainly carbon dioxide (CO₂); however, lesser quantities of particulate matter (PM), NO_x, SO₂, VOCs, and CO are also generated.

INSPECTION

I arrived at the facility and contacted Jason Sedar, who is owner/operator of the facility. The units were not operating at the time of inspection. We discussed the operation of each crematory furnace, EU-CREMATORY and EU-CREMATORY2, and Jason provided records on site and emailed me copies of the records requested as well.

PTI# 149-04

PTI No. 149-04 was issued for EU-CREMATORY, a Millennium III crematory incinerator fueled by natural gas with a burn rate of 150 lb/hour. The crematory unit was not in use at the time of inspection. This unit has a secondary chamber (afterburner) set to operate at 1700 degrees Fahrenheit and has an operating range of 1600-2300 degrees F with a retention time of 1.32 seconds. The secondary chamber is equipped with a thermocouple connected to continuous chart recorder for monitoring the afterburner temperature. This unit is not operated very frequently but is still in use.

Emission Limits

SC 1.1a Restricts PM emissions to 0.20 lbs/1000 lbs of exhaust gases. Manufacturer test data submitted during permit evaluation shows PM emissions at 0.04 lbs/1000 lbs exhaust gases. Under ideal operation, the incinerator meets this emission limit. Verification of emission rates has not been requested to-date.

Material Usage Limits

SC 1.2 Requires only pathological waste is burned (human/animal remains and anatomical parts and/or tissue; bags/containers used to collect and transport the waste material; animal bedding). The facility continues to burn only human remains.

Process/Operational Limits

SC 1.3 Facility shall not combust waste unless a minimum temperature of 1600 degrees F and a minimum retention time of 1.0 seconds in the afterburner are maintained; The temperature wheel chart recorder showed a consistent burn temp of approximately 1700 degrees F. The unit is designed to operate with a retention time of 1.32 seconds in the afterburner.

SC 1.4 Requires the incinerator only operate if installed, maintained, and operated in a satisfactory manner to control emissions. Per the continuous temperature wheel chart recorder, it appears the unit is being maintained and operated in a satisfactory manner.

The last recorded burn was on 4/25/2024 and temperature remained between 1700 and 1800 degrees for approximately 3 hours. Previous firings recorded on the temperature wheel chart were similar.

Monitoring

SC 1.5 Requires a device to monitor and record the temperatures in the secondary combustion chamber (afterburner). The incinerator has a continuous temperature wheel chart recorder installed and operating correctly.

Recordkeeping/Reporting/Notification

SC 1.6 Records are being kept in an acceptable format.

SC 1.7 Requires daily records of description and weight of waste combusted in EU-Crematory and be kept on file for 5 years. The unit only burns human remains and

the facility uses a floor scale with a digital readout for weighing charges. Records of daily combustion are available and accurate.

SC 1.8 Requires records be kept for the combustion temperature of the afterburner and on file for 5 years. Records are kept in an acceptable manner as wheel charts recording dates and combustion temperatures and were available for review.

Stack/Vent Restrictions

SC 1.9 Requires a maximum stack diameter of 33.5" and a minimum height above ground level of 19'. Stack diameter was unable to be verified. Stack height was verified using a rangefinder during the inspection to be approximately 19'.

PTI No. 134-23

PTI No. 134-23 was recently issued for EU-CREMATORY2, a Cremation Systems Human Crematory Model CFS2300 that also operates on natural gas. The crematory unit was not in operation at the time of inspection. The unit has a maximum charge capacity of 800 pounds with a burn rate of 150 lbs/hour. The cremation chamber has a single forced air natural gas burner rated at 850,000 BTU/Hr. The afterburner chamber has a single forced air natural gas burner rated at 1,500,000 BTU/Hr and is controlled by closed loop digital process controller. Process information is displayed on a digital screen and also sent via email to the operator in real time.

Emission Limit

SC I.1 Restricts PM emissions to 0.20 lbs/1000 lbs of exhaust gases. Manufacturer test data submitted during permit evaluation shows PM emissions at 0.04 lbs/1000 lbs exhaust gases. Under ideal operation, the incinerator meets this emission limit. Verification of emission rates has not been requested to-date.

Material Limit

SC II.1 Requires only pathological waste is burned (human/animal remains and anatomical parts and/or tissue; bags/containers used to collect and transport the waste material; animal bedding). The facility burns only human remains.

SC II.2 Restricts charge capacity to 800 pounds. Records reviewed showed the facility does not load charges exceeding the limit.

SC II.3 Restricts fuel type to natural gas. The facility only operates this emission unit on natural gas. The natural gas supply line to the unit was clearly visible.

Process/Operation Restrictions

SCIII.1 The unit only burns human remains and the facility uses a floor scale with a digital readout for weighing charges.

SC III.2 Requires the incinerator only operate if installed, maintained, and operated in a satisfactory manner to control emissions. Per the records provided, it appears the unit is being maintained and operated in a satisfactory manner.

Design/Equipment Parameter(s)

SC IV.1-2 Based on visual verification and the records reviewed, the secondary combustion chamber with afterburner is installed, maintained, and operated in a satisfactory manner.

SC IV.3 The facility uses a floor scale with a digital readout for weighing charges.

Testing/Sampling

SC V.1 No emissions testing has been completed or requested by the AQD to verify PM emissions.

Monitoring/Recordkeeping

SC VI.1-5 Records and calculations are available upon request. The operator sets the weight into the control unit of EU-CREMATORY2 to begin the firing process. The control unit displays the weight of the charge and type of container (cardboard/wood), temperature data for the afterburner, main chamber, and stack, and also the duration of the firing. Once the remains are fully combusted, the operating system of the unit emails the owner/operator process data from each firing. Data is also backed up internally within the control unit and can be accessed at any time.

Afterburner temperature in the secondary combustion chamber is continuously monitored and recorded, maintaining a steady temperature of 1600 degrees Fahrenheit during firings.

SC VI.6 No maintenance has been completed on the new unit due to the recent installation. Inspections are conducted routinely by the operator before each firing.

SC VI.7 The owner/operator has only natural gas on site as a fuel source for EU-CREMATORY2. Records were not reviewed since the unit only has access to a single fuel source.

Stack/Vent Restrictions

SC VIII.1 Requires a maximum stack diameter of 20.0" and a minimum height above ground level of 21.5'. Stack diameter was unable to be verified. Stack height was verified using a rangefinder during the inspection to be approximately 21.5'.

SUMMARY

The facility appears to be in compliance with PTI No. 149-04 and PTI No. 134-23 and following the Incinerator Operation and Maintenance Guidelines in Appendix A of each PTI.

NAME Joseph S. Scurran

DATE 8-7-2024

SUPERVISOR Michael Kaplan