

M3883
manila
Ingham

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

M388337921

FACILITY: US DEPT OF AGRICULTURE		SRN / ID: M3883
LOCATION: 3606 E MT HOPE RD, EAST LANSING		DISTRICT: Lansing
CITY: EAST LANSING		COUNTY: INGHAM
CONTACT: Raj Kulkarni, Supervisory Poultry Scientist		ACTIVITY DATE: 12/13/2016
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of facility which was last inspected by AQD in 2011.		
RESOLVED COMPLAINTS:		

On 12/13/2016, the Michigan Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted an inspection of the United States Department of Agriculture Avian Disease and Oncology Laboratory, Agricultural Research Services (USDA ADOL ARS), a facility which was last inspected in 2011.

Environmental contact:

Raj Kulkarni, Supervisory Poultry Scientist; raj.kulkarni@ars.usda.gov

Facility description:

The USDA ADOL is a poultry research facility. Deceased birds, along with poultry waste materials, are incinerated, or otherwise treated at the site, prior to disposal.

Emission units:

Emission unit ID	Emission unit description	Permit to Install No., and federal rules, if applicable	Operating status
EUINCINERATOR	Pathological waste (85%) and trash (15%) incinerator; Consutech Model C-120-P-1P; natural gas-fired; Burn rate 290 lbs/hr, maximum charge 600 lbs	86-06	Compliance
EUINCINERATOR2	Consutech Systems Pathological Incinerator; Model No. C-32PS-1P Fuel type: natural gas Maximum charge: 170 lbs Burn rate: 85 lbs/hr Charge type: pathological waste	106-10	Compliance
Two poultry wastewater treatment tanks and boiler	Two poultry wastewater treatment tanks and 25 horsepower natural gas-fired boiler	138-92	Not operating

Regulatory overview:

This facility is considered to be a true minor source, rather than a major source of air emissions. A *major source* has the potential to emit (PTE) of 100 tons per year (TPY) or more, of one of the criteria pollutants. *Criteria pollutants* are those for which a National Ambient Air Quality Standard exists, and include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VOCs), lead, particulate matter smaller than 10 microns, and particulate matter smaller than 2.5 microns. It is also considered a minor or *area source* for Hazardous Air Pollutants (HAPs), because it does not have a PTE of 10 TPY or more for a single HAP, nor does it have a PTE of 25 TPY or more for combined HAPs.

40 CFR Part 60, Subpart EEEE is titled *Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or For Which Modification or Reconstruction is Commenced on or After June 16, 2006*. Both current incinerators were installed after 12/9/2004. 40 CFR 60.2887(l) of Subpart EEEE excludes pathological waste incineration units from the requirements of the subpart, if the unit burns 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low level

radioactive waste, and/or chemotherapeutic waste as defined in Section 60.2977, and the operator notifies the Administrator that the unit meets these criteria. AQD has been notified, AQD's Brian Culham noted in his 6/2/2011 inspection activity report, and both incinerators were issued permits based on these criteria. Therefore, they do not appear to be subject to Subpart EEEE.

Fee status:

This facility is not a Category I fee subject source, because it is not a major source for criteria pollutants. It is not a Category II fee-subject source because it is not a major source for Hazardous Air Pollutants (HAPs), nor is it subject to federal New Source Performance Standards. Additionally, it is not Category III fee-subject, because it is not subject to federal Maximum Achievable Control Technology standards.

This facility is not required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS). Under AQD Operational Memorandum No. 13, the reporting threshold below which a source is not required to report is 10 tons per year of VOC.

Location:

This facility is located on the south side of Michigan State University's campus, in East Lansing. To the immediate north of the property are athletic fields, followed by university buildings. To the immediate east of the property are commuter parking lots. To the immediate south of the property is a golf course. About 2,000 feet west of the incinerators themselves are the buildings of Spartan Village, a residential complex for students. To the immediate northwest of the ADOL property is a Michigan Department of Agriculture and Rural Development facility, along with MSU offices.

Recent history:

This facility was last inspected by AQD on 6/2/2011. The facility was found to be in compliance, at that time. AQD attempts to inspect true minor facilities every several years.

Arrival:

This was not an unannounced inspection. I was accompanied by a DEQ Student Intern, Mr. Michael Fennell, for educational purposes. Guidance from AQD management for taking interns on inspections is to pre-arrange the inspection with the facility, to ensure that an adequate number of supervisory personnel are available to safely escort DEQ staff through the site.

We arrived at about 9:20 AM. At the front desk, I presented my credentials, per AQD procedures. I did not provide a copy of the DEQ brochure *Environmental Inspections: Right and Responsibilities*, because it is being revised at this time. We met with Mr. Raj Kulkarni, Supervisory Poultry Scientist, who was present during the 2011 inspection of the facility by AQD.

Inspection:

Mr. Kulkarni introduced us to USDA's Mr. Shane Wludyka, their maintenance person, who has been certified to operate and service the incinerators by the manufacturer, Consutech. We were told that for major repairs, APC, a contractor for Consutech, does the major work. We were advised of recent work on both incinerators by APC, which included replacing refractory, among other things.

The incinerators were both running, burning natural gas for fuel, but without any waste being charged, we were told. It was explained that there was no waste available to burn at this time, but they wanted to demonstrate that the units are in proper operating condition. We were advised that waste material being available for the incinerators to burn is based upon the projects which are going on, at the time, so there is not a set operating schedule each week.

EUINCINERATOR, PTI No. 86-06:

This unit is a Consutech Model C-120-P-1P, natural gas-fired incinerator, permitted to burn pathological waste and up to 15% trash. It is the older and larger of the two incinerators onsite. This unit burns the same wastes as the newer, smaller unit, EUINCINERATOR2, but it also burns used poultry bedding, we were informed. It is my understanding that wood shavings are the bedding material, and that there is too large of a volume of this material to burn in the smaller incinerator.

We examined EUINCINERATOR in operation, at 9:52 AM. It was not burning any waste, as previously mentioned, because none was available to burn. It was running on natural gas as fuel, and there were no visible emissions. Only heat waves could be seen. Weather conditions were partly sunny and about 25 degrees F, with winds out of the southwest at 10 miles per hour.

We checked compliance with the special conditions of PTI No. 86-06, as follows.

The Emission Unit Description states that the burn rate is 290 lbs/hour, as a maximum, and that the maximum charge is 600 lbs. Recordkeeping from their *Log Book - Consumat Large Incinerator*, from 10/28/2016 through 12/9/2016, shows that maximum charge weight was 250 lbs. We were informed that this unit operates in burn cycles 2 hours in length. A charge weight of 250 lbs burned over a period of 2 hours equals a burn rate of 125 lbs/hour, well below the maximum burn rate.

Emission Limits

SC No. 1.1 limits particulate emissions (PM) from EUINCINERATOR to 0.20 lb/1,000 lbs of exhaust gases, corrected to 50% excess air. In order to verify compliance with this emission limit, a stack test would be required. There does not appear to be a reason to require a stack test at this time, as AQD does not have reason to suspect that the incinerator is being operated or maintained improperly.

Material Usage Limits

SC No. 1.2 prohibits the permittee from burning any waste in EUINCINERATOR other than the following wastes:

85% Pathological wastes -- As defined in the federal Standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material, and animal bedding.

15% Trash - A mixture of highly combustible waste such as paper, cardboard cartons, wood boxes, and combustible floor sweepings, from commercial and industrial activities. The mixture may contain up to 10 percent by weight of plastic bags, coated paper, laminated paper, treated corrugated cardboard, oily rags, and plastic or rubber scraps.

We were advised that they are burning the kinds of waste they are permitted to burn. It is my understanding that this unit incinerates deceased poultry, and used poultry bedding. It is also my understanding that this unit incinerates plastic bags which contain the dead poultry, and that the weight of the plastic itself would weigh less than the maximum 15% of waste which can consist of trash.

Process/Operational Limits

SC No. 1.3 prohibits the combustion of waste in EUINCINERATOR unless a minimum temperature of 1,800 degrees F and a minimum retention time of 1.0 seconds in the secondary combustion chamber are maintained. This is discussed in detail, below.

Secondary chamber temperature set point is 1,800 degrees F, the minimum required by the PTI. On one date we examined records for, 10/24/2016, the secondary chamber temperature looked to be about 1,775 degrees F to me. This appeared to be an isolated incident, as all other records during October, November, and December 2016 showed that secondary chamber temperatures were at 1,800 degrees F. It was not clear why the temperature was lower on 10/24, but it appeared to be an anomalous incident.

The Underlying Applicable Requirements for this Special Condition are Rules 301, 331, and 910. It is highly unlikely that the temperature of 1,775 degrees F during a single operational run caused opacity in excess of that allowed by Rule 301, or that it caused particulate emissions in excess of what is allowed by Rule 331 for pathological waste incinerators. There is not evidence sufficient to prove that the control device, the afterburner or secondary combustion chamber, was installed, maintained, or being operated in an improper manner at that time. On all the other dates we reviewed, the circular charts showed that secondary chamber temperature was at 1,800 degrees F.

SC No. 1.4 requires that the incinerator be installed, maintained, and operated in a satisfactory manner to control emissions from EUINCINERATOR. A list of recommended operating and maintenance procedures is specified in Appendix A. We were told they have a Standard Operating Procedure (SOP) for the unit. We reviewed the maintenance records for EUINCINERATOR, which go back to 2006. They keep service logs for the site going back to before 2005, when there were previous incinerators. They keep the PTI No. 86-06 in their logbook, for easy access/reference.

Appendix A, Incinerator Operation and Maintenance Guidelines, are as follows:

1. Designate a trained operator for your unit and make that person responsible for compliance with the air pollution control requirements.
2. Grates should be cleaned before each day's operation (more often if necessary), and the ashes disposed of properly.
3. Preheat the unit with the burners (not with waste) for at least 15 minutes.
4. Do not overload the incinerator. Stay within the given loading rates, and follow the manufacturer's instructions.
5. Schedule charges to minimize opening the charging door as infrequently as possible. Opening the charging door lets cold air in and quenches the fire causing smoke.
6. Burn only the type of wastes that your incinerator has been approved to burn. Follow the manufacturer's instructions to maximize the efficiency of the unit, and to properly burn the waste(s).
7. Keep the combustion air adjusted according to the manufacturer's instructions.
8. Observe the stack frequently and adjust your operation as necessary to eliminate smoke and fly ash.
9. A copy of the manufacturer's manual and this Guideline should be posted near your incinerator.
10. Make quarterly inspections to check and service all of the equipment. If you do not have a qualified person available for proper inspections, a service contract with a reputable manufacturer is advisable.

This unit is located outdoors. We did not see any indication that the unit was being operated improperly. There was, however, a very small amount of ash which had landed on the snow near the door where ash is shoveled out of the incinerator, and into a container for proper disposal. The waste container was closed at this time, as was the loadout door on EUINCINERATOR.

Monitoring

SC No. 1.5 requires that the permittee install, maintain, and operate in a satisfactory manner a device to monitor and record the temperature in the secondary combustion chamber of EUINCINERATOR on a continuous basis. The circular chart recorder appeared to be keeping records properly. A digital readout on the side of the unit showed the instantaneous actual temperature. They appear to be meeting this permit requirement.

Recordkeeping/Reporting Notification

SC No. 1.6 requires that the permittee keep, in a satisfactory manner, daily records of the time, description, and weight of waste combusted in EUINCINERATOR. The records are to be kept on file for a period of at least 5 years and made available upon request. We were shown that they keep the burn logs for EUINCINERATOR, back to 2006, when this unit was installed. Their log book shows date, time, the amount of waste, and what kind of waste, such as chickens, manure, litter, or trash. Mr. Wludyka photographed an example of one of their recordkeeping forms from their *Log Book - Consumat Large Incinerator*, and e-mailed it to me, after the inspection (please see attached). The time period covered was from 10/28/2016 through 12/9/2016. They appear to be in compliance with this permit condition.

SC No. 1.7 requires that the permittee keep, in a satisfactory manner, secondary combustion chamber temperature records for EUINCINERATOR. The records are to be kept on file for a period of at least 5 years, and made available, upon request. We reviewed required temperature chart recordings. We were shown that they keep these records back to the 2006 starting date for this unit. Red ink is used to record the upper or secondary chamber temperature, while green ink is used to record the lower or primary chamber temperature. They appear to be meeting this permit requirement. The records are also discussed earlier in this activity report, regarding SC No. 1.3.

SC No. 1.8 specifies a maximum stack diameter of 24 inches, and a minimum stack height of 26 feet. I did not note the stack height during the inspection, but AQD's Brian Culham indicated in his 2011 inspection activity report that the stack appeared to be of the appropriate height and dimension.

Later in the inspection, we returned to EUINCINERATOR, while it was in its cool down phase. Mr. Wludyka opened the feed door to the unit, to show me the new air plenum, new refractory, and new door gasket which were installed fairly recently. On the circular chart recording data from today's operation, it could be seen that the upper or secondary chamber temperature was 1800 degrees F, for the duration of the burn cycle. It has been previously mentioned in this report that because there was no waste to burn today, the incinerators were operated for us burning fuel only, in order to demonstrate that they are operational.

EUINCINERATOR2; PTI No. 106-10:

This unit is a Consutech Systems Pathological Incinerator Model No. C-32PS-1P, natural gas-fired unit. It is the newer incinerator and the smallest of the two onsite. It is not used as frequently as the older unit, we were informed, and it last ran in November of this year. It combusts deceased poultry and trash, but no wood shavings/animal bedding, we were told. It is my understanding that the used wood shavings are combusted in the older, larger incinerator, because of the large volume of this waste material.

EUINCINERATOR2 was operating, burning natural gas as fuel, to show us that it was in working condition. We were advised that there was no waste available for it to burn today. Waste would be loaded into the unit from inside an adjacent building. There were no visible emissions from EUINCINERATOR2, at this time. Weather conditions were partly sunny and about 25 degrees F, with winds out of the southwest at 10 miles per hour.

The permit format is slightly different for PTI No. 106-10 compared with PTI No. 86-06, given that it is 4 years more recent. We reviewed the special conditions in the PTI, as follows:

I. EMISSION LIMITS

Special Condition (SC) No. I. 1 limits emissions of particulate matter (PM) from EUINCINERATOR2 to 0.20 lb/1,000 lbs of gas, corrected to 50% excess air. The underlying applicable requirement is Rule 331. In order to verify compliance with this emission limit, a stack test would be required. There does not appear to be a need to require a stack test at this time, as AQD does not have reason to suspect that the incinerator is being operated or maintained improperly.

During the inspection, EUINCINERATOR2 was running on fuel only, to demonstrate that it was capable of operating, as no waste was currently available to be incinerated. There were no visible emissions.

II. MATERIAL LIMITS

SC No. II. 1. states that the permittee shall not burn any wastes in EUINCINERATOR2 other than the following:

Pathological wastes -- As defined in the federal standards of Performance for New Stationary Sources, 40 CFR 60.51c, pathological waste means waste materials consisting of only human or animal remains, anatomical parts, and/or tissue; the bags/containers used to collect and transport the waste material; and animal bedding. This permit applies to ANIMAL pathological waste and associated materials.

It is my understanding that they follow the above requirement.

SC No. II. 2 states that the permittee shall not charge more than 170 lbs per charge in EUINCINERATOR2. Please see attached printout of a digital photo of the *Log Book - Small Incinerator*, e-mailed to me by Mr. Wludyka, on 12/13/2016. This page from the log book was for the time period 8/22/2016 to 10/20/2016, and showed that they were below the 170 lbs maximum charge weight. The reported charge weights varied from 20 lbs to 80 lbs, so they appear to satisfy this permit condition.

SC No. II. 3 states that the permittee shall not burn any fuel in EUINCINERATOR2 other than natural gas. Natural gas appears to be the only fuel burned in the incinerator.

III. PROCESS/OPERATIONAL RESTRICTIONS

SC No. III. 1 prohibits the permittee from combusting waste in EUINCINERATOR2 unless a minimum temperature of 1600 degrees F and a minimum retention time of 1.0 seconds in the secondary combustion chamber are maintained. Review of temperature recordings on circular charts, discussed later in this report, showed that they were meeting the 1600 degrees F minimum temperature requirement, on 10/20 and 10/27/2016.

During the inspection, we observed instantaneous temperature monitors, showing the current temperatures of the upper and lower chambers. The upper or secondary chamber had a set point of 1650 degrees F, and the actual process value at this time was 1650 degrees F. EUINCINERATOR2 was not burning waste at this time, because there was no waste to burn, we were told, but was being run to demonstrate it is operational. The lower or primary combustion chamber does not have a minimum temperature requirement. The set point for the primary chamber was 1400 degrees F, and the actual process value was 1003 degrees F and rising. It was explained that the actual value is normally higher, when waste is actually being combusted in the primary chamber.

SC No. III. 2 requires that the incinerator be installed, maintained, and operated in a satisfactory manner to control emissions from EUINCINERATOR2, and refers to a list of recommended operating and maintenance procedures specified in Appendix A. We were advised this unit has a SOP similar to the older, larger unit. We were able to examine their maintenance records. A copy of the permit, and their logbook, are kept right at the incinerator's control panel, which is indoors.

Appendix A, Incinerator Operation and Maintenance Guidelines, are as follows:

1. Designate a trained operator for your unit and make that person responsible for compliance with the air pollution control requirements.
2. Clean grates before each day's operation (more often if necessary), and the ashes disposed of properly.
3. Do not combust waste until the secondary combustion chamber (afterburner) is at or above the minimum required temperature. This temperature must be maintained for the duration of the burn cycle.
4. Do not overload the incinerator. Stay within the given loading rates, and follow the manufacturer's instructions.
5. Schedule charges to minimize opening the charging door as infrequently as possible. Opening the charging door lets cold air in and quenches the fire causing smoke.
6. Burn only the type of wastes that the incinerator has been approved to burn. Follow the manufacturer's instructions to maximize the efficiency of the unit, and to properly burn the waste(s).
7. Keep the combustion air adjusted according to the manufacturer's instructions.
8. Observe the stack frequently and adjust your operation as necessary to eliminate smoke and fly ash.
9. Post a copy of the manufacturer's manual and this Guideline near the incinerator.
10. Make quarterly inspections to check and service all of the equipment. If a qualified person is not available for proper inspections, a service contract with a reputable manufacturer is advisable.
11. Follow manufacturer's operation and maintenance guidelines.

IV. DESIGN/EQUIPMENT PARAMETERS

SC No. IV. 1 requires that the permittee install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the temperature in the secondary combustion chamber of

EUINCINERATOR2 on a continuous basis. They have a temperature monitoring device, and record data on circular charts, which we were able to review. They appear to be in compliance with this permit condition.

V. TESTING/SAMPLING

This is nonapplicable, as there are no requirements.

VI. MONITORING/RECORDKEEPING

Records are required to be maintained on file for a period of five years.

SC No. VI. 1 requires that the permittee monitor and record the temperature in the secondary combustion chamber of EUINCINERATOR2 on a continuous basis. USDA staff showed us the circular charts on which temperature records are kept each week for EUINCINERATOR2. The records include secondary and primary combustion chamber temperatures, which they refer to as the upper and lower chambers, respectively. For weeks in which they do not operate, the circular charts are left blank, and are kept on file, we were advised. They appear to be in compliance with this permit condition.

SC No. VI. 2 requires that the permittee keep, in a satisfactory manner, daily records of the time (duration of burn), description and weight of any waste combusted in EUINCINERATOR2, and that they keep all records on file and make them available upon request. Review of records showed that they were keeping this information; please see the attached example of a recent record from the *Log Book - Small Incinerator*, for the time period 8/22/2016 to 10/20/2016. Start time was always identified, and I was told that the unit has a 2 hour run time. From this, the end time of a run can be inferred. Description and weight of waste combusted was also listed. They appear to be in compliance with this requirement.

SC No. VI. 3 requires that the permittee keep, in a satisfactory manner, secondary combustion chamber temperature records for EUINCINERATOR2,, and that they keep them on file and make them available upon request. As mentioned above, USDA staff showed us the circular charts on which temperature records are kept each week for EUINCINERATOR2. The records include secondary and primary combustion chamber temperatures, which they refer to as the upper and lower chambers, respectively. For weeks in which they do not operate, the circular charts are left blank, and are kept on file, we were advised. They appear to be in compliance with this permit condition.

SC No. VI. 4 requires that records be kept, in a satisfactory manner, of all service, maintenance and equipment inspections for EUINCINERATOR2. We were shown maintenance records for EUINCINERATOR2. The most recent service performed by APC, the contractor for Consutech, was to remove damaged refractory and replace it on 7/27/2016. Some of the other repair items which I saw from the 7/27 record were that the floor of the unit was recast, the center air plenum was replaced, and a new rear door gasket was installed.

VII. REPORTING

This is nonapplicable, as there are no requirements.

VIII. STACK/VENT RESTRICTIONS

SC No. VIII. 1 requires that the exhaust gases from the stack SVINCINERATOR2 be discharged unobstructed vertically upwards to the ambient air, and that this stack have a maximum exhaust diameter of 16 inches, and a minimum height above ground of 19 feet. They appeared to be in compliance with this requirement.

IX. OTHER REQUIREMENTS

This is nonapplicable, as there are no applicable requirements.

2 wastewater tanks and 25 hp boiler; PTI No. 138-92:

We did not observe the 2 wastewater treatment tanks and 25 hp boiler, during the inspection. On 12/16/2016, by e-mail, I inquired if they were still at the site. Mr. Kulkarni advised me that they are, but they were last operated in October-November of 2015. AQD will examine this equipment during the next inspection of the USDA ADOL facility.

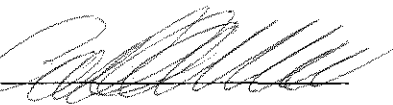
PTI No. 138-92 has only 14 General Conditions and 2 Special Conditions.

Special Condition No. 15 states that there shall be no visible emissions from the poultry wastewater treatment tanks except for uncombined water vapor. The tanks were not running at the time of the inspection, as explained above.

Special Condition No. 16 states that the applicant shall not operate the tanks unless the HEPA filters in the vents are installed and operating properly. As previously mentioned, the tanks were not operating, during the inspection.

Conclusion:

No instances of noncompliance were found. The incinerators appeared to be well-maintained.

NAME 

DATE 5/12/2017

SUPERVISOR 