



KOCH FOODS

November 9, 2023

Mr. Mario Ornelas
Division of Air Pollution Control
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, TN 37916

**Re: Response to Email Inquiry 10/5/2023
Koch Foods of Morristown, LLC
Morristown (Hamblen County), Tennessee
Facility ID: 32-0215**

Mr. Ornelas,

Koch Foods of Morristown, LLC's (Koch Foods) poultry processing plant (Facility) received your email inquiry on October 5, 2023 requesting additional information on possible air contaminant sources onsite. Currently, the only permitted emission sources at the Facility are two boilers (Permit No. 067466F), each greater than 10 mmBtu/hr.

Koch Foods, with the assistance of a third-party consultant (Woodruff and Howe Environmental Engineering, Inc.), conducted an in-depth review of the Facility's emission sources and the potential of each to emit air pollutants. This review determined that there are no other emissions sources/units at the Facility that require permitting as described below.

Construction and operating permits and associated applications are not required for Exempt Sources as listed in Rule 1200-03-09-.04. Further, Rule 1200-03-09-.04(4) states, no person shall be required to obtain or file a request for a permit due to operation of an exempted source. Excepting the permitted boilers all other potential emission sources at the Facility generally meet an exemption as outlined below.

Boilers (PM, NO_x, CO, SO₂, VOC)

Both of the Facility's boilers are properly permitted in accordance with Permit No. 067466F.

Water heaters (PM, NO_x, CO, SO₂, VOC)

The Facility does not have any natural-gas fired water heaters. The Facility's permitted boilers generate the steam/hot water requirements for the Facility's poultry processing operations.

Emergency Engines (PM, NO_x, CO, SO₂, VOC)

The Facility does not have any emergency engines (i.e., backup generators or fire pump engines).



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Cleaners, Sanitizers, & Intervention (VOC)

Cleaners and Sanitizers

The Facility uses various cleaners and sanitizers in accordance with USDA food safety regulations. An 8-hr sanitation shift is completed every production day during which processing equipment inside the Facility is cleaned. These products contain chemicals that may become airborne and be released through the buildings ventilation system roof exhausts. The review conducted showed that cumulatively, emissions from all cleaners and sanitizers are less than 0.5 lbs/hr and meet the exemption per Rule 1200-03-09-.04(4)(d)2.

Intervention

The Facility uses a peroxyacetic acid (PAA) containing product for poultry anti-microbial intervention. The current product being used is AFCO 4363 Perasafe 23, which contains 23% PAA, 35% acetic acid, and 10% hydrogen peroxide. The product is added to the poultry chillers and dip tanks. This product is blended into the recirculating water supply stream for these baths and dip tanks with target concentrations ranging from 20 – 800 ppm. The Facility does not spray this product in any application. When airborne, PAA and acetic acid are VOC's that can be released in two areas: 1) the building ventilation system roof exhausts and 2) from the 1,000 gallon PAA poly storage tank.

Koch Foods has measured PAA concentrations in areas where employees work using a ChemDAQ meter. Readings at the Facility have always been below 0.5 PPM within the production areas. Due to decomposition rates, concentrations at exhaust points would be expected to be much lower. The Georgia Tech Research Institute conducted detailed research which included measuring PAA and acetic acid concentrations in air in multiple poultry processing plants. The plants in the Study were spray applying PAA, which would lead to higher PAA emissions in the Study than would be measured at Koch Foods. This Study was used to calculate potential VOC emissions from Koch Foods by the following procedure:

- A) The PAA and acetic acid concentrations measured in the Study were taken near "hot-spots" where concentrations were expected to be the highest.
- B) These "high" concentrations were assumed to remain unchanged as the airflow left the building (in reality, the concentrations significantly decrease the farther away from the source).
- C) The concentrations were converted to a mass by knowing the airflow volumes leaving the building's ventilation system roof exhausts.

The calculations showed that VOC emissions (the sum of PAA and acetic acid) are less than 0.1 lbs/hr, and therefore, this process meets the exemption per Rule 1200-03-09-.04(4)(d)8.

The PAA Storage Tank is an exempt emissions unit per Rule 1200-03-09-.04(4)(d)12.

Reference: Houlroyd, Jenny L., Kristen M. Butler, Hilarie Warren, Robert Hendry, Dr. Doug Britton. "Exposures to Peracetic Acid-Based Disinfectants among Poultry Processing Workers Comparing Traditional Industrial Hygiene Sampling with the use of ChemDAQ Safecide PAA Monitor." Food Processing Technology Division, Georgia Tech Research Institute, Funding provided by US Poultry and Egg Association. 2017.



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Refrigerant Systems (VOC or Ammonia)

This Facility utilizes an anhydrous ammonia refrigeration system to chill and keep finished poultry products cold prior to shipping offsite. The maximum intended inventory of the system is 32,674 pounds of ammonia. Ammonia emissions may occur from fugitive leaks in the process piping, pumps, compressors and other components of the system. A review of historical ammonia purchases (to recharge the ammonia systems as a result of the fugitive losses), shows total purchases at the Facility of 7031 lbs of anhydrous ammonia from 2018 to 2022. This indicates approximately 1406 lbs of ammonia are released fugitively per year. The Refrigeration System is an exempt emissions unit per Rule 1200-03-09-.04(4)(b) and subsequent Rule 1200-03-09-.04(5)(f)47. The Facility operates within the requirements of EPA's Risk Management Program and OSHA's Process Safety Management standard.

Diesel Storage Tanks (VOC)

The Facility has a single diesel storage tank of 10,000 gallons. Off-road diesel is stored and used to fuel onsite mobile equipment. It is also available as a backup fuel to the Boilers. The Diesel Tank is an exempt emissions unit per Rule 1200-03-09-.04(4)(d)14. Onsite diesel fueling operations are exempt per Rule 1200-03-09-.04(5)(f)17.

Live Hang Lines (PM)

Live chickens are unloaded from coops in an outdoor area onto a conveyor which carries them into the building. Once in the Live Hang Room, the chickens are manually repositioned on a processing line in preparation for slaughtering activities. This Room is ventilated by a baghouse (Live Receiving Baghouse) which draws air from the room and filters it prior to releasing to the atmosphere. Employees work in the Room ventilated by the Live Receiving Baghouse. The baghouse ensures that no significant particulates (i.e., poultry feathers) are released outdoors while providing comfort airflow in the Room and serving as an outdoor housekeeping practice. The manufacturer of the baghouse has provided a PM guarantee that results in less than two tons/year PM emissions from the baghouse. The Live Receiving Baghouse is an exempt emissions unit per Rule 1200-03-09-.04(4)(c) and subsequent Rule 1200-03-09-.04(5)(g)3.

Cooling Towers (PM)

The Facility has two wet cooling towers that are used to dissipate heat from the refrigeration process to the atmosphere. Per AP-42 13.4, PM emissions may result from the "drift" that can be carried from the tower as mist or small droplets, which contains Total Dissolved Solids. The Cooling Towers are Evaporative Condensers manufactured by Evapco, and are both equipped with drift eliminators which significantly reduce drift and associated PM emissions. Facility calculations show the cumulative PM emissions from the Cooling Towers to be less than 0.02 lbs/hr. The Cooling Towers are exempt emissions units per Rule 1200-03-09-.04(4)(d)(8), Rule 1200-03-09-.04(4)(b) and subsequent Rule 1200-03-09-.04(5)(f)15.

Other Emission Sources

Aerosols, Paints, Sealants and Caulks

The Facility uses de minimis amounts of aerosols, paints, sealants, and caulks for routine maintenance actions. These maintenance activities are exempt emissions units per Rule 1200-03-09-.04(4)(b) and subsequent Rule 1200-03-09-.04(5)(f)45 and 1200-03-09-.04(5)(f)46.



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Inks

The Facility's use of liquid-based inks is limited to office/admin use and is insignificant. The only printing conducted for manufacturing purposes is box labels (shipping labels) and printing is completed using a Zebra ZT510 thermal printer that uses thermal transfer ribbons as opposed to liquid inks.

Natural Gas fired Make-up Air and HVAC Units

Small HVAC units are generally located on the roof and may combust natural gas for building comfort heating, cooling and dehumidification. These units combust natural gas and are therefore exempt per Rule 1200-03-09-.04(4)(d)17.

Odorizing System

Given the Facility's location to downtown, the Facility uses an odorizing system to emit a product for malodor control. The system operates by vaporizing a liquid and distributing the vapor through a piping system where the vapor is released. The odorizing product does not contain any federal/state listed Hazardous Air Pollutants (HAPs). Due to the limited quantity of the odorizing product used, emissions from this activity are less than 0.5 lbs/hr and meet the exemption per Rule 1200-03-09-.04(4)(d)2.

Based on the facility-wide evaluation and the information provided above, there are no additional emission units that would be required to be listed within the permit application. Realizing that operations are subject to change, Koch Foods continually evaluates potential operational changes for resultant emissions. Should a proposed change result in significant emissions, a timely application would be submitted as required.

Should you have any questions or require further information, please contact me at 423-522-2257 or Robert.Hull@kochfoods.com.

Sincerely,

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