

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

B880940749

FACILITY: ARMADA GRAIN		SRN / ID: B8809
LOCATION: 73180 FULTON, ARMADA		DISTRICT: Southeast Michigan
CITY: ARMADA		COUNTY: MACOMB
CONTACT: Lance Hollweg , Owner		ACTIVITY DATE: 06/26/2017
STAFF: Samuel Liveson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of a minor source.		
RESOLVED COMPLAINTS:		

On June 26, 2017, I conducted an unannounced, scheduled, level 2 inspection of Armada Grain Company (Armada Grain), located at 73180 Fulton Street in Armada, Michigan. The purpose of this inspection was to determine the facility’s compliance with the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); the Air Pollution Control Rules; and the conditions of Consent Order (CO) AQD No. 5-1998.

I arrived on site around 11:50 AM. I met with Mr. Lance Hollweg, Owner, and with Mr. Travis Tomaschko, Production Supervisor. Mr. Hollweg provided facility records, and Mr. Tomaschko provided a walkthrough of the production facility and shipping area. I showed Mr. Hollweg my DEQ identification and explained the purpose of the inspection.

Opening Meeting

Armada Grain manufactures and bags grains, animal feed, and pet food. Operation is Monday to Friday, 7:30 AM to 5:00 PM, and sometimes to 11:30 PM. There is not normally operation on Saturdays.

Armada Grain’s CO, AQD No. 5-1998, went into effect April 8, 1998 which required the facility to install a scrubber to control odors from the facility.

The facility has one natural gas fired boiler on site related to the facility extruder. According to Mr. Hollweg, there are no cold cleaners or emergency generators on site. Since the last inspection in December of 2014, the facility has installed an additional hammer mill.

The facility does not appear to be applicable to NSPS Subpart DD: Standards of Performance for Grain Elevators because the facility manufactures animal and pet food.

Facility Walk-Through

Mixer

Ingredients for the grains, feed, and pet food are located in bins above ground level. These bins range in size from 600 cubic feet (cf) to 2000 cf. Ingredients are mixed in the mixer below ground level and then sent upstairs to either the pellet mill or extruder. The mixer was operating during the facility inspection. The mixer appears to emit to the in-plant environment, and to be exempt from permitting requirements via R 285(2)(dd)(ii).

Pellet Mill

The pellet mill was running during the operation. The meal is mixed with steam and squished to form pellets. Emissions from the pellet mill are externally vented and controlled by a cyclone that appeared to be operating properly; no fallout was observed from operation. Meal that is collected at the bottom of the cyclone is returned to the pellet mill. This unit appears to be exempt from permitting requirements via R 285(dd)(iii).

Extruder

The extruder was not operating at the time of the inspection. The extruder vents to the scrubber. The extruder acts like a pressure cooker and is used to make dog food, cat food, and any animal food with starch and protein. The extruder uses steam and pressure to cook raw starch, which can otherwise be unhealthy for animals. This equipment appears to be exempt from permitting requirements via R 285(dd)(iii).

(2)

An 85 horsepower natural gas boiler creates the steam for the extruder. The boiler appears to be exempt from permitting requirements via R 282(b)(ii).

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Dryer

The natural gas fired dryer was not operating during the inspection. The dryer removes water from the animal food after the extruder. The dryer also vents to the scrubber, and was not operating at the time of the inspection. Mr. Hollweg explained that the dryer is the primary cause of odors, though some come from the extruder. The dryer is analogous to cooking food on a stovetop, where water vapors evaporate into the air. The drying oven is natural-gas fired and has a heat input capacity of 7-8 MMBTU. It generally operates at 250-260°F. This equipment appears to be exempt from permitting requirements via R 285(2)(dd)(iii).

Hammer Mills/Grinders

There are two hammer mills on site. The terms *hammer mill* and *grinder* are synonymous according to Mr. Tomaschko. Metal hammers strike corn to grind it into smaller pieces. Two baghouses are associated with the hammer mills. Each hammer mill emits to a separate baghouse before exhausting to ambient air. One grinder and its associated baghouse were operating during the facility inspection. Mr. Tomaschko was able to show me the bags in the non-operating baghouse, which are long cylinders. A jet of air pulses the bags every few minutes to remove grain dust. Grain dust collected in the baghouse is reused in the process. I observed that the pressure drop is measured across the baghouses to make sure they are operating properly. Bags are replaced as needed, generally every six months. The grinders appear to be exempt from permitting requirements via R 285(2)(dd)(iii).

Dust Control

It is in the facility's economic interest to control dust emissions, since feed collected in cyclones and baghouses is a usable product. Mr. Tomaschko explained that air locks on equipment help control dust, and pointed out connections to a central vacuum system throughout the building.

Scrubber – CO AQD No. 5-1998

The scrubber was not operating during the inspection. Emissions from the extruder and dryer are routed down through a venturi scrubber, and up through a packed bed scrubber. Particulate settles into a compartment below both scrubber sections, which is emptied out approximately once per month. From above the settlement compartment, a pipe takes water to the sewer. Chlorine and caustic soda are added to water as a disinfectant and to adjust pH, respectively. Routine maintenance is performed on the scrubber fan and belts. Freshwater is added at a rate of four gallons per minute (2 gallons per minute per scrubber section).

Recordkeeping

Mr. Hollweg provided scrubber records from March 2016 through May of 2017. Mr. Hollweg previously submitted records for May of 2015 through February of 2016, so MDEQ-AQD has records of two full years of operation per CO AQD No. 5-1998 paragraphs 11.A through E. Scrubber records include the pressure drop across both sections of the scrubber; the water flow to the scrubber; the pH of sump water; the venturi temperature; the type of feed produced each day; and the hours of operation, per CO paragraphs 11.A through E.

Operating parameters are generally within desired ranges from document "Operating Parameters for Odor Control System". However, the facility water recycling rate is higher than recommended. 100 gallons per minute of recycled water are used on the venturi scrubber, above the 72 gallons per minute maximum rate. Similarly, in the packed bed scrubber, two gallons per minute of fresh water are added, below the minimum four gallons per minute. Because odor complaints haven't been received for the facility, it appears reasonable to keep the recycle rate high to conserve water costs. If complaints are received, MDEQ-AQD may request Armada Grain increase the fresh water rate to the scrubber.

According to facility operating parameters, the residual chlorine concentration is dependent upon the level of odor entering the tower, which Armada Grain maintains at its maximum 50 parts per million.

The scrubber also has a preventative maintenance "P&M Check List" per CO paragraph F.

I talked with Mr. Hollweg about paragraph 22 of the CO, which talks about the process for CO termination. He said the facility plans to request termination of the CO.

Odor Investigation

After departing offsite at 1:30 pm, I conducted an odor investigation. Wind was westerly (headed east) at 13 miles per hour according to weather.com for Armada. There are no streets directly downwind east of the facility. No odors were observed at the end of Morrison Drive, northeast of the facility. Barely detectable grain odors were observed at the eastern end of Depot Street, northeast of the facility. Odors did not appear to constitute a violation of Rule 901.

Conclusion

In December of 2014, the facility received a violation notice for not keeping scrubber operating records. Since then, the Air Quality Division (MDEQ-AQD) has received two full years of records for scrubber operating records, from May of 2015 through May of 2017. Armada Grain appears to be in compliance with the federal Clean Air Act; the NREPA; the Air Pollution Control Rules; and CO AQD No. 5-1998.

NAME



DATE

7/19/17

SUPERVISOR

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