

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Self Initiated Inspection

U-63-09-0131  
FY 2018 Insp

U6309013143270

FACILITY: TMD Friction		SRN / ID: U63090131
LOCATION: 1035 Crooks Road, Troy		DISTRICT: Southeast Michigan
CITY: Troy		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 01/05/2018
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: <u>          </u>
SUBJECT: FY 2018 inspection of TMD Friction – Research and Development ("TMD Friction" or "the company")		
RESOLVED COMPLAINTS:		

**TMD Friction – Research and Development (U-63-09-0131)**  
**A Nisshinbo Group Company**  
**1035 N. Crooks Road**  
**Troy, Michigan 48084-7119**

**Purchase: About 2014, Nisshinbo Group Company purchased TMD Friction.**

**PTI: Rules 285 (one common cartridge filter dust collector via a ventilation manifold) and 287 (an adhesive coating booth with back-draft filters and powder coating) exempt process equipment? 336.1287(2)(a) < 2 gallons of adhesive per day if emissions that are released only into the general in-plant environment [≈ 1.1 tons of VOC per year] or 336.287(2)(c) & < 200 gallons of coating per month if overspray particulate control system is used in a booth [≈ 5 tons of VOC per year] and 336.1287(2)(d) powder coating booth**

On January 05, 2018, I conducted a level-2 self-initiated annual **FY 2018 inspection** of TMD Friction – Research and Development ("TMD Friction" or "the company"), a Nisshinbo Group Company, located at 1035 N. Crooks Road, Troy, Michigan 48084-7119. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules.

The inspection was conducted to follow up on the previous years' complaints.

During the FY 2018 inspection, Mr. Terry Ryan (Phone: 248-280-4050-ext. 224; Cell: 248-404-7449; Email: [Terry.Ryan@TMDfriction.com](mailto:Terry.Ryan@TMDfriction.com)), Production Manager, and Ms. Lindsey Vincent (Phone: 248-280-4050-ext. 203; Fax: 248-280-4060; Cell: 248-709-2946; Email: [Lindsey.Vincent@TMDfriction.com](mailto:Lindsey.Vincent@TMDfriction.com)), Office and Adm. Manager, Mr. Joe Buffa (Phone: 248-280-4050-ext. NA; Fax: 248-280-4060; Cell: 248-795-0708; Email: [Joe.Buffa@TMDfriction.com](mailto:Joe.Buffa@TMDfriction.com)), assisted me.

About 2011, Mr. Tom Millsap stated, in his letter to AQD, that TMD Friction would start production; Millsap separated from TMD Friction for Chrysler. About August 23, 2013, Mr. Allal Ahmamad (Phone: 248-280-4050-ext. 230; Fax: 248-280-4060; Cell: 248-795-0707; Email: [allal.ahmamad@tmdfriction.com](mailto:allal.ahmamad@tmdfriction.com)), Manager, Quality, Mfg. and Purchasing, separated from TMD

TMD Friction's Troy facility consists of two parts: Manufacturing and Research & Development. TMD Friction employs about 25 workers at Troy. TMD Friction, a Nisshinbo Group Company, is a global friction products, commercial vehicle brakes, manufacturing company with 135 years in braking friction industry. Manufacturing plants are located worldwide; Troy (Michigan) is only U.S. manufacturing facility. No asbestos is used in the brake products. Brake pads have reinforced fiber. Coefficient of friction in the brakes is controlled. Binders, thermoset resins or polymers, hold all materials together.

Mr. Ryan stated (Sep 2013) that TMD was trying to eliminate production by outsourcing to Mexico. At this time (FY 2018), only commercial truck brake products are outsourced. At this time (FY 2018), only race car brake products are manufactured in Troy.

In order to address the complaints (from Ed Belda (Phone: 248-288-9021), 1790 Wickham, Royal Oak), TMD turned an exhaust discharge vent away from Meijer Dr. (summer 2013). However, pollutants migration is substantially influenced by wind (velocity and direction).

### **R & D facilities**

R & D facilities consist of:

1. Chemical Lab for testing physical and chemical properties of brake components and raw materials.
2. Weighing station (booth) for dry materials. The dust is captured and ducted to a ventilation manifold that is ducted to a common dust collector located outside the building.
3. CNC and NC machines. The dust is captured and ducted to a ventilation manifold that is ducted to a common dust collector located outside the building.
4. One Hofmann (Pruftechnik, Germany) dynamometer for brake pad testing. The Dyno is electrically driven; no IC engine.

### **Manufacturing**

#### **Powder coating booth**

One powder coating booth (6 ft. W \* 6 ft. D \* 6 ft. H: Nordson Econo-Coat Model ECVC 2000, Serial No. 4016772) is present. Fine overspray powder is controlled by two cartridge filters. The powder is captured and but not recycled / reused. Brake parts are baked in an infrared oven at  $\approx 250$  °F. The filters are cleaned by pulse-jet air (1 pulse / minute). As a small quantity user, it is not economical to reuse powder; also more than one color powder coatings are involved. Waste, overspray powder is disposed of. About 15-20 pounds of powder per month are used. The powder coated parts are baked ( $\approx 250$  °F) in one electric oven (Dispatch)

The booth is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(d).

The powder coating produces very high coating transfer efficiency (TE > 90%) as result of reusing over-spray powder that is captured. Powder coatings are low in VOCs; typically less

than 1% VOC. Predominantly, VOC emissions are from curing oven due to monomer crosslinking. The filters that capture the powder for recycling / reusing insure low particulate emissions. While powder coatings contain ≈1% VOC, solvent-based coatings contain 40-70% VOC. While powder coatings result in over 90% transfer efficiency, liquid spray coatings (with no electrostatic) can attain ≈50% transfer efficiency.

### **Blenders (2) and Grinders (2)**

Two materials blenders and two grinders are present. The dust is captured and ducted to a ventilation manifold that is ducted to a common dust collector located outside the building.

### **Presses (6)**

Six (reduced from 7 to 6 as TMD Friction sold one of seven about 2014) presses are present. They mold parts (brakes). Materials are compressed at 1800-2000 psi at 300 °F. This process has no exhaust to outside ambient air. The press are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(i).

### **Weigh Stations**

One manual and one automatic weigh stations are present. The dust is captured and ducted to a ventilation manifold that is ducted to a common dust collector located outside the building.

### **Ovens**

Three (3) batch (one Precision Quincy and two Dispatch) and one continuous (belt roller) electric ovens are present. The parts are baked at 350 – 450 °F. Exhaust to outside ambient air with negligible emissions (electric).

### **Tumbler machine**

One tumbler machine is present. It is equipped with its own dust collector. No exhaust to outside ambient air.

### **Grinder machine**

Two grinder machines are present. The dust is captured and ducted to a ventilation manifold that is ducted to a common dust collector located outside the building.

### **Adhesive booth (Spray-Tech)**

6 ft. \* 6 ft. adhesive booth (Spray-Tech) with back-draft filters is present. Both water and solvent based adhesives are used. Less than 5 (reduced to 5 from 10 as some production is outsourced to Mexico) gallons of adhesives per year are used (based upon CY2017 purchase records).

The booth is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1287(2)(c). Also exempt pursuant to Rule 336.1287(2)(a) if using less than two (2) gallons of adhesive per day and if emissions are released only into the general in-plant environment. TMD friction uses < 1 gallon of adhesive per day.

I asked Mr. Ryan to install and inspect the filters such that they fit, at all times, snugly without gaps and holes. I also asked him to keep records of adhesive and solvent usage according to Rule 336.1287(2)(c).

### One common dust collector

All particulate matter emissions from the processes at the facility (except when no exhaust or its own filter system) are captured and ducted via one common ventilation manifold to a dust collector consisting 12 cartridge filters (Robo-Vent 866-Robo-Vent). The filters are cleaned by pulse-jet air (1 pulse / minute). The filters are replaced once per year. Recently, the filters were replaced (November 2017). The dust collector is equipped with 55-gallon drum that acts as a hopper for collected dust. The drum is emptied once per month (frequency is reduced to once per month from once per two weeks due to reduced production in 2016) and the dust is disposed of.

The baghouse is equipped with a pressure drop ( $\Delta P$ ) gauge and digital display of pressure drop ( $\Delta P$ ) is produced. During the FY 2018 inspection,  $\Delta P$  reading was **1.08** (January 05, 2018) inches of water. The display produces red light if  $\Delta P$  exceeds 3.5 inches of water.

Dust collector and gauge: Great Lakes Air Systems (Phone: 248-655-1800) of Clawson, Model DFM-8000-12, Serial No. 19710, HP = 20, AMPS =27, 3-Phase 460 Volts

Each process equipment, at the Troy facility, served by the dust collector, is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(l). In addition, each the process equipment with its own dedicated filter system or no exhaust to outside ambient air is exempt from Rule 201.

### Conclusion

All process equipment are exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rules 285, 287. All processes comply with the conditions of exemption. Recently, AQD has not received complaint.

NAME B. Manakell DATE 2/8/2018 SUPERVISOR Joyce B.