

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

U61190500548813

FACILITY: Apparelmaster Blue Ribbon & Mat		SRN / ID: U611905005
LOCATION: 341 East Apple Avenue, Muskegon		DISTRICT: Grand Rapids
CITY: Muskegon		COUNTY: MUSKEGON
CONTACT: Eric Anderson, Presidnet/Owner		ACTIVITY DATE: 05/09/2019
STAFF: Chris Robinson	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: FY19 Inspection to determine compliance with applicable air quality rules and regulations.		
RESOLVED COMPLAINTS:		

As part of the 2019 Fiscal year initiative, an inspection of Apparel Master Blue Ribbon Mat and Linen (Apparel Master), located at 341 Apple Avenue in Muskegon Michigan, was conducted by AQD staff Chris Robinson (CR). The inspection was scheduled and unannounced. CR met with Mr. Eric Anderson, President and Owner of the facility, announcing intent to conduct an inspection to determine this facility's compliance status with respect to applicable state and federal air quality rules and regulations.

Apparel Masters specializes in providing services such as uniform, janitorial and mat services, towel and aprons as well as mops and other linens. Per Mr. Anderson, less than one (1) percent of their business involves shop and printing facility rags. The facility has been at this location since 1986. They currently operate 11 washers ranging in capacity from 20 lbs.-120lbs. as well as 17 dryers. Lint filters are used on all of the dryers and cleaned after each use. All of the equipment at this facility operate either on electricity or on natural gas.

Based on a review of Safety Data Sheets, Ethylene Glycol Monobutyl Ether is used in the detergent which is considered to be a relatively nonvolatile solvent used for its surfactant properties. *Vapor Pressure and VOC information is not provided in the SDS. Further research indicates that this compound is considered to be a Volatile Organic Compound (VOC) with a vapor pressure of 0.8 millimeter of mercury at standard conditions (<https://en.wikipedia.org/wiki/2-Butoxyethanol>), therefore both the washers and dryers cannot be exempt from Rule 201 permitting requirements per Rule 281(2)(e). According to Mr. Anderson, the facility uses approximately 40 gallons/week (160 gallons/month) of this detergent. The SDS identifies this product as having a specific gravity of 1.012 which can be used to estimate this products density for use in approximating worse case monthly emissions. Therefore, VOC emissions are most likely over-estimated.*

$$1.0122 \text{ (Specific Gravity of detergent per SDS)} \times 8.34 \text{ (Specific gravity of water)} = 8.44 \text{ lbs./gallon (Density of detergent)}$$

Based on the SDS's composition information, this product is comprised of between 1.0-10% of Ethylene Glycol Monobutyl Ether, which equates to approximately 135.04 lbs. VOC's/month emitted.

$$8.44 \times 10\% = 0.844 \text{ lbs. of VOC's/gallon}$$

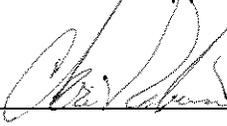
$$0.844 \times 55 \text{ gallons used} = 135.04 \text{ lbs. VOC's/month.}$$

With worst case VOC emissions of 135.04 lbs./month, the washers and dryers would be exempt from Rule 201 permitting requirements per Rule 290(2)(i) for noncarcinogenic VOC's of no more than 1,000 lbs./month. The 135.04 pounds of VOC calculated assumes all VOC's are emitted and would include emissions from all of the washers and dryers combined. This calculation does not take into consideration the amount of detergent that goes down the drain

during the rinse cycles, it does not factor in a realistic emissions factor and nor does it take into consideration that the detergent is diluted once the wash cycle begins.

A 1.2 MM BTU/hr boiler, which was installed in 1989, is used to generate steam and a 1.5 MMBtu/hr direct contact heater is used for providing hot water. These are both exempt from Rule 201 permitting requirements per Rule 282(2)(b)(i) and too small to be subject to New Source Performance Standards (NSPS) 40 CFR Part 60 Subpart Dc.

Based on observations, discussions and a review of SDS's, Apparel Masters appears to be in compliance with applicable state and federal air quality rules and regulations.

NAME 

DATE 5/13/2019

SUPERVISOR 