B4550
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DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B455046839

FACILITY: VACUUM ORNA METAL INC		**SRN / ID:** B4550
LOCATION: 11380 HARRISON RD, ROMULUS		**DISTRICT:** Detroit
CITY: ROMULUS		**COUNTY:** WAYNE
CONTACT: Frank Chester , Vice President		**ACTIVITY DATE:** 10/19/2018
STAFF: Todd Zynda	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Scheduled Inspection
INSPECTED BY: Todd Zynda, AQD
PERSONNEL PRESENT: Mark Menendez, Plant Manager
FACILITY PHONE NUMBER: 734-941-9100
FACILITY FAX NUMBER: 734-941-1127
FACILITY WEBSITE: www.vacuumorna-metal.com

FACILITY BACKGROUND

Vacuum Orna-Metal (VOM) manufactures decorative flower containers and other metalized plastic containers. The facility also provides custom vacuum plating and restoration services for antique vehicles (vehicle dashboards). VOM is located in the City of Romulus, on the west side of Harrison Road between Goddard Road and Northline Road. The nearest residential property is located immediately adjacent to the facility boundary to the southeast.

Currently the facility has nine full time employees. Hours of operation are 7:00 AM to 3:30 PM four days a week.

The facility is a Title V source because it was classified as a Section 112 major source of hazardous air pollutants (HAPs) with respect to 40 CFR Part 63, Subpart PPPP. The facility currently operates equipment under Renewable Operating Permit (ROP) MI-ROP-B4550-2017 and permit to install (PTI) 145-16A. The facility entered into a consent order with the AQD (Consent Order AQD No. 31-2016) on August 2, 2016 resolving violations with 40 Code of Federal Regulations (CFR) Part 63, Subpart PPPP. Consent Order AQD No. 31-2016 was terminated on August 24, 2018.

On March 23, 2018, the facility was issued PTI 145-16A, which limits HAPs emission to less than major thresholds.

On September 20, 2018 a letter dated September 14, 2018 was received from VOM requesting that the MI-ROP-B4550-2017 be voided based upon the rescinding of the Once-In Always-In (OIAI) policy by the United States Environmental Protection Agency (USEPA) on January 25, 2018. The ROP will be voided based on the compliance status determined through the inspection on October 19, 2018 (the subject of this report), the issuance of PTI 145-16A limiting HAPs to less than 8.9 tons per year on an individual basis and 22.5 tons per year on an aggregate basis, and the rescinding of the OIAI policy.

PROCESS OVERVIEW

The facility operates 15 plastic mold injection machines, four flow coat machines (each with an associated dry-off oven), and three vacuum metalizing machines. The flower pots or other plastic containers are manufactured in one of the 15 plastic mold injection machines. Prior to metal vacuum deposition, a base coat resin is applied in one of four flow coater lines. The molded products are then coated in one of three vacuum metalizing chambers. In these chambers, aluminum is vacuum deposited onto the molded product. Following vacuum deposition, the metalized products are top coated in one of four flow coater lines. Each flow coater line has a natural gas "dry-off" oven (located at roof level) that dries the finished product at approximately 150 to 170 degrees Fahrenheit (°F).

The facility also operates a small paint booth, a welding area, two light machining and fabrication areas (drill presses, lathes, etc.), two plastic cutting machines, a 550 gallon strip tank, and 50 gallon strip tank.

COMPLAINT/COMPLIANCE HISTORY

There are no complaints for this facility on file.

During recent inspections on May 5, 2015, March 5, 2013, and April 9, 2011, the facility was determined to be in compliance with applicable permit conditions and regulations.

During the inspection on January 14, 2016, the facility was determined to be in noncompliance with 40 CFR Part 63, Subpart PPPP. As a result, the facility entered Consent Order AQD No. 31-2016.

During the inspection on November 10, 2016 the facility was determined to be in noncompliance with 40 CFR Part 63, Subpart PPPP. However, the facility was on track to be in compliance with Subpart PPPP, through Consent Order AQD No. 31-2016 by April 30, 2018 (12-month compliance period) and by May 31, 2017 (as first monthly compliance period).

During the inspection on November 28, 2017 the facility was determined to be in compliance with MI-ROP-B4550-2017 and Consent Order AQD No. 31-2016.

OUTSTANDING VNs

None

INSPECTION NARRATIVE

On October 19, 2018 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted an inspection of VOM. During the inspection, Mr. Mark Menendez, Plant Manager, provided information and a tour of facility operations relating to air quality permits and regulations. The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, MI-ROP-B4550-2017.

At approximately 11:00 AM, AQD staff, Mr. Todd Zynda, arrived onsite and was greeted by Mr. Menendez. During the opening meeting the record request was provided to Mr. Menendez. Mr. Menendez stated that he would pass the request along to Mr. Frank Chester, President. On October 23, 2018, Mr. Chester provided the requested records via email.

Mr. Menendez provided a tour of the facility. During the inspection, the facility was not operating. The facility currently operates Monday through Thursday, with Friday used for shipping, maintenance, cleaning, etc. The tour began with observation of the four flow coaters. According to Mr. Menendez, the flow coaters are unchanged from the last inspection. The flow coaters apply the resin in a slow, controlled manner, as opposed to spraying. The basecoat is applied to the plastic mold prior to vacuum metalizing. The topcoat is applied following vacuum metalizing. The basecoat is cured at approximately 170 °F and topcoat is cured at approximately 150 ° F.

Next, observation of the three vacuum metalizing chambers was conducted. When the machines are in use, the air is pumped out of the chamber creating a vacuum. In the center of the chamber, a coiled piece of tungsten holding a piece of aluminum is heated with electricity. When the coil is heated the aluminum vaporizes. While under vacuum the particles of the metal are deposited onto the products. The vacuum metalizer holds ten racks which are spinning during the metal deposition process.

Following observation of the vacuum metalizing chambers, a small paint booth was observed. During the inspection the booth was not in use, but filters were in place. The paint booth is used on an infrequent basis and is primarily used for smaller, customized jobs for restoration of vintage vehicle dashboards.

Following observation of the paint booth, the two light machining (drill presses, lathes, etc.) areas, and a welding area were observed. Emissions from the machining areas are released to the general in-plant environment. Welding emissions are ducted and vented outside to ambient air on the north side of the facility building.

Next two plastic cutting machines were observed. The machines are used to grind up plastic parts into plastic pellets. Emissions from the plastic cutting machines are released to the general in-plant environment.

The tour continued with observation of the plastic mold injection machines. When in use, clear plastic pellets are fed to each mold injection machine. The plastic is heated and injected into a mold. The machines vary based on the amount of material that can be handled and the specified shape of the mold. Additionally, the molds can be colored using colored plastic pellets. The facility uses a mold release and mold cleaner on an infrequent basis. The safety data sheets (SDS) for the products used were provided as part of the 2016 inspection.

Following observation of the plastic mold injection machines, the strip tanks area was observed. There are two tanks used (550 gallon and 55 gallon). The 550 gallon tank is heated to 175 °F and is used to strip the racks that hold molded parts that enter the flow coaters and vacuum chambers. The 55 gallon tank is heated to 115 °F and is used to strip old car parts (dashboards, etc.) for restoration. During the inspection the temperature monitor on the 550-gallon tank read 175 °F. The temperature monitor for the 55-gallon tank read 115 °F.

APPLICABLE RULES/PERMIT CONDITIONS

ROP MI-ROP-B4550-2017 was renewed with an effective date of November 6, 2017. The ROP expiration date is November 6, 2022 with an application due date of May 6, 2022. PTI 145-16A was issued on March 23, 2018. The Special Conditions (SC) of both the ROP and PTI are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased.

MI-ROP-B4550-2017: SOURCE-WIDE CONDITIONS

SC I. 1. **COMPLIANCE**. VOC emissions shall be less than 89.8 tons per year on a 12-month rolling basis. The highest VOC emissions occurred at the end of November 2016 at 12.811 tons per year.

SC II. 1 and SC V.1. **COMPLIANCE**. VOC content of coatings shall be less than 7.4 lb/gallon (minus water) as applied. The facility provided manufacturer SDS for each coating, that includes VOC content. According to the SDSs provided, the highest VOC content for a coating is in the 3075 Propylene Base Coat at 5.3 lb/gallon. On November 14, 2016, as part of the 2016 inspection, a coating sample of the 3075 Propylene Base Coat was collected by the AQD for Method 24 analysis. The sample was submitted to Advanced Technologies of Michigan (ATOM) for analysis. Analytical results indicate a VOC content of 5.8 lb/gallon. According to the SDSs provided, the highest VOC content of other material used is the C-14 Retarder at 7.29 lb/gallon. At this time, the AQD accepts the SDSs provided to demonstrate compliance with the 7.4 lb/gallon material limit.

SC II. 2. **COMPLIANCE**. Coatings shall not exceed 24,200 gallons per year on a 12-month rolling basis. The highest coating usage occurred at the end of December 2016 at 4,161 gallons.

SCs VI. 1 and 2. **COMPLIANCE**. All required calculations shall be in an acceptable format. Shall keep the following information on a monthly basis: gallons or pounds of VOC containing material used, gallons or pounds of VOC containing material reclaimed, amount of coatings used on 12-month basis, VOC content, and VOC emission calculations monthly and 12-month rolling. The facility maintains the required records in an acceptable format.

MI-ROP-B4550-2017: FG-NESHAP PPPP

SC I. 1, 2, 3, 4, and SC III.1. **COMPLIANCE**. Shall comply with 0.16 lb per lb of coating solids for general use coatings and 0.26 lb per lb of coating solids for thermoplastic olefin (TPO) coatings on a 12-month rolling time period. Shall comply with emission limits at all times. The facility records provided indicate compliance with the 0.16 lb per lb emission limit at the end of July 2017 (0.123 lb per lb). The highest reported emission limit since compliance occurred at the end of June 2018 (0.136 lb per lb).

SC V.1. **COMPLIANCE**. Shall determine the mass fraction of organic HAP for each material used, the mass fraction of coating solids for each coating, and the density of each material. The facility maintains the required information on a monthly basis.

SC VI. 1. **COMPLIANCE**. Shall keep all records required by 40 CFR 63.4530 in the format and timeframes outlined in 40 CFR 63.4531. Records are maintained as required.

SC VI. 2. **COMPLIANCE**. Shall maintain the records specified in SC VI. 2. a. through i. The facility maintains the required records.

SC VI.3. **COMPLIANCE**. Shall demonstrate continuous compliance with applicable organic HAP emission limit in 40 CFR 63.4490 for each compliance period according to 40 CFR 63.4551(a) through (g). Records provided demonstrate compliance with this condition.

SC VII. 4 and 5. **COMPLIANCE**. Shall submit the applicable notifications specified in 40 CFR 63.7(b) and (c), 63.8(f)(4) and 63.9(b) through (e) and (h), an initial notification and a notification of compliance status as specified in 40 CFR 63.4510. Shall submit applicable notifications specified in 40 CFR 63.4520. The initial notification and notification of compliance status report (May 1, 2016 through April 31, 2016) was received on May 25, 2016. The facility has continued to submit notification of compliance status reports received August 12, 2016 (for reporting period January 1, 2016 through July 31, 2016), February 14, 2017 (July 1, 2016 through December 31, 2016), July 11, 2017 (reporting period January 1, 2017 through June 30, 2017), January 24, 2018 (reporting period July 1, 2017 through December 31, 2017), and July 10, 2018 (reporting period January 1, 2018 through June 30, 2018).

SC IX. 1. **COMPLIANCE**. Shall comply with all applicable provisions of 40 CFR Part 63, Subpart A and Subpart PPPP. The facility has demonstrated compliance with this condition.

MI-ROP-B4550-2017: FG-RULE 287(c)

SC II. 1. **COMPLIANCE**. Coatings applied shall be less than 200 gallons per month, as applied, minus water. Usage records for the paint booth are less than 200 gallons per month. The maximum paint used during 2017 occurred at the end of March 2017 at 0.56 gallons.

SC IV. 1. **COMPLIANCE**. Exhaust system shall be equipped with a properly installed and operating particulate control system. During the inspection, the paint booth appeared to meet these requirements. Particulate control filters were in place.

SC VI. 1. a and b. **COMPLIANCE**. Shall maintain the following records: volume of coating used, as applied, minus water in gallons; documentation of any filter replacements for exhaust systems serving coating spray equipment. The facility maintains the records of coating used and documentation of filter replacements as required.

MI-ROP-B4550-2017: FG-VACUUM-MT

SC VI. 1. **COMPLIANCE.** Shall maintain names and metals used and amount of each used in pounds. The usage records of aluminum and tungsten for January 1, 2016 through November 29, 2017 were provided via email on December 13, 2017.

PTI 145-16A: FGFACILITY

SC I. 1. **COMPLIANCE**. VOC emissions shall be less than 89.8 tons per year on a 12-month rolling basis. The highest VOC emissions occurred at the end of November 2016 at 12.811 tons per year.

SC I.2 and 3. **COMPLIANCE**. HAP emissions shall be less than 8.9 tons per year on an individual basis and 22.4 tons per year on an aggregate basis. The highest 12-month rolling aggregate HAPs emissions since the issuance of PTI 145-16A (March 2018) occurred at the end of August 2018 at 206.8 pounds (0.1 tons).

SC II. 1 and SC V.1. **COMPLIANCE**. VOC content of coatings shall be less than 7.4 lb/gallon (minus water) as applied. The facility provided manufacturer SDS for each coating, that includes VOC content. According to the SDSs provided, the highest VOC content for a coating is in the 3075 Propylene Base Coat at 5.3 lb/gallon. On November 14, 2016, as part of the 2016 inspection, a coating sample of the 3075 Propylene Base Coat was collected by the AQD for Method 24 analysis. The sample was submitted to Advanced Technologies of Michigan (ATOM) for analysis. Analytical results indicate a VOC content of 5.8 lb/gallon. According to the SDSs provided, the highest VOC content of other material used is the C-14 Retarder at 7.29 lb/gallon. At this time, the AQD accepts the SDSs provided to demonstrate compliance with the 7.4 lb/gallon material limit.

SC II. 2. **COMPLIANCE**. Coatings shall not exceed 24,200 gallons per year on a 12-month rolling basis. The highest coating usage occurred at the end of December 2016 at 4,161 gallons.

SC V.2. **COMPLIANCE**. Shall determine HAP content of any material applied using manufacturer's formulation data. Verification of HAP content upon request of the AQD. The facility provided manufacturer SDS for each coating, that includes HAP content. At this time testing has not been requested.

SCs VI. 1. **COMPLIANCE**. All required calculations shall be in an acceptable format. The facility maintains the required records in an acceptable format.

SC VI.2. **COMPLIANCE**. Shall keep the following information on a monthly basis: gallons or pounds of VOC containing material used, gallons or pounds of VOC containing material reclaimed, amount of coatings used on 12-month basis, VOC content, and VOC emission calculations monthly and 12-month rolling. The facility maintains the required records.

SC VI. 3. **COMPLIANCE**. Shall keep the following information on a monthly basis: gallons or pounds of HAP containing material used, gallons or pounds of HAP containing material reclaimed, HAP content, and HAP emission calculations monthly and 12-month rolling. The facility maintains the required records.

CONSENT ORDER AQD NO. 31-2016

Consent Order AQD No. 31-2016 was terminated on August 24, 2018, based on demonstrated compliance with the Consent Order AQD No. 31-2016 and 40 CFR Part 63, Subpart PPPP.

Plastic Mold Injection Machines
The 15 plastic mold injection machines appear to be exempt from PTI requirements under the following rule.

R336.1286(2)(b): "The requirement to obtain a PTI does not apply to... plastic injection, compression, and transfer molding equipment and associated plastic resin handling, storage, and drying equipment."

The facility uses a mold release and mold cleaner in conjunction with the mold injection lines. According to Mr. Chester, the mold release and mold cleaner are used on an infrequent basis (for maintenance activities) as the mold release and cleaner leave a residue that transfers over to the finished product, and leaves a "blotchy" appearance. The use of the mold release and mold cleaner associated with plastic injection machines are also exempt under Rule 286(2)(b).

Additionally, the plastic mold injection operations are not subject to 40 CFR Part 63, Subpart WWWW – National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. Per §63.5785, facilities are subject to Subpart WWWW, if the facility operates a "reinforced plastics composites production facility that is located at a major source of HAP emissions. Reinforced plastic composites production is limited to operations in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured using thermoset resins and/or gel coats that contain styrene to produce plastic composites." According to Mr. Chester during the previous inspection, the facility does not use a thermoset plastic. The facility uses acrylic butadiene styrene (ABS) which is considered a "thermoplastic" opposed to thermoset.

Metal Machining Areas (drill presses, lathes, etc.)
The machining areas appear to be exempt from PTI requirements under the following rule.

R336.1285(2)(l)(vi)(B): "The requirement to obtain a PTI does not apply to...equipment for carving, cutting, routing, turning, drilling, machining...etc. metal and emissions are released only to the general in-plant environment."

Plastic Cutting Machines

The machining areas appear to be exempt from PTI requirements under the following rule.

R336.1285(2)(l)(vi)(B): "The requirement to obtain a PTI does not apply to...equipment for carving, cutting, routing, turning, drilling, machining...etc. plastic and emissions are released only to the general in-plant environment."

Welding area
The welding area appears to be exempt from PTI requirements under the following rule.

R336.1285(2)(i): "The requirement to obtain a PTI does not apply to brazing, soldering, welding, or plasma coating equipment."

Strip Tanks
The SDS provided indicates that the strip tanks use a sodium hydroxide (NaOH) solution. The strip tanks appear to be exempt from PTI requirements under the following rule.

R336.1285(2)(r)(iv): "The requirement to obtain a PTI does not apply to metal treatment processes if the process emissions are only released into the general in-plant environment: - cleaning metal treatment processes if the process emissions are only released into the general in-plant environment: - cleaning."

Natural Gas Heaters and Curing Ovens

The natural gas heating units, are exempt from PTI requirements under the following rule.

R336.1282(2)(b)(i): "Permit to install does not apply to... Sweet natural gas, liquefied petroleum gas, or a combination thereof and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour."

Records provided during the previous inspection indicate that the combined heat input capacity of all the units is 2,730,000 Btu per hour.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not applicable.

MAERS REPORT REVIEW

MAERS submittal for 2017 was submitted on time and was complete.

FINAL COMPLIANCE DETERMINATION

The facility is currently in compliance with MI-ROP-B4550-2017 and PTI 145-16A. Consent Order AQD No. 31-2016 was terminated on August 24, 2018. The ROP will be voided based on the compliance status determined through the inspection on October 19, 2018, the issuance of PTI 145-16A limiting HAPs to less than 8.9 tons per year on an individual basis and 22.5 tons per year on an aggregate basis, and the rescinding of the OIAI policy.

NAME _____ DATE 11/5/18 SUPERVISOR JK