B4550
MANUAL

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

B455037614

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:** 11/10/2016
STAFF: Todd Zynda	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Scheduled Inspection
INSPECTED BY: Todd Zynda, AQD
PERSONNEL PRESENT: Frank Chester, President
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 as the potential to emit (PTE) of hazardous air pollutants (HAPs) is greater than 10 tons on an individual HAP basis. The facility currently operates equipment under Renewable Operating Permit (ROP) MI-ROP-B4550-2012 and permit to install (PTI) No. 145-16. PTI No. 145-16 is a Title V opt-out permit for volatile organic compounds (VOCs). The facility also 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.

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.

OUTSTANDING CONSENT ORDERS

The facility entered Consent Order AQD No. 31-2016 on August 2, 2016. The Consent Order requires the facility to comply with the emission limit in 40 CFR Part 63, Subpart PPPP by April 30, 2018 (12-month compliance period). The Consent Order is structured so that the facility will demonstrate a first month of compliance with Subpart PPPP by May 2017.

OUTSTANDING VNs

None

INSPECTION NARRATIVE

On November 10, 2016 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspectors, Mr. Todd Zynda and Ms. Rebecca Loftus, conducted an inspection of VOM. During the inspection, Mr. Frank Chester, President, 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-B4550-2012, PTI 145-16, and Consent Order AQD No. 31-2016.

At approximately 8:00 AM, AQD staff, Mr. Todd Zynda and Ms. Rebecca Loftus, arrived onsite and were greeted by Mr. Chester. During the opening meeting the facility operations, permit requirements, the AQD Consent Order, and ROP renewal were discussed. Mr. Chester stated that the facility has begun to use new coatings that will be in compliance with 40 CFR Subpart PPPP. A copy of emission calculations was provided.

Following discussion of record keeping requirements, Subpart PPPP, and the ROP renewal, a tour of the facility was conducted. The tour began with observation of two light machining (drill presses, lathes, etc.) areas, and a welding area. 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. According to Mr. Chester, 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 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 via email (see attached).

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 is used to strip old car parts (dashboards, etc.) for restoration. During the inspection the temperature monitor on the 550 gallon tank read 170 °F. The temperature monitor for the 55 gallon tank read 116 °F.

Following observation of the strip tanks, the four flow coaters were observed. During the inspection four flow coaters were in operation (two for basecoat, and two for topcoat). 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.

On November 14, 2016 a coating sample was collected for Method 24 analysis. The sample was collected from the flow coater using 3075 Propylene Base Coat. Manufacturer's data indicates this coating has a VOC content of 5.3 lbs/gallon.

APPLICABLE RULES/PERMIT CONDITIONS

ROP MI-ROP-B4550-2012 was renewed with an effective date of January 25, 2012. The ROP expiration date is January 25, 2017 with an application due date of July 25, 2016. The facility recently submitted a ROP renewal application on January 4, 2016. The Special Conditions (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased.

FG-FLOW-COAT

S.C VI. 1. **COMPLIANCE.** Shall maintain monthly and annual records of the names and amounts of each coating used, in gallons. The facility maintains monthly and annual records as required. The usage records were provided via email on November 22, 2016.

FG-VACUUM-MT

SC VI. 1. **COMPLIANCE.** Shall maintain names and metals used and amount of each used in pounds. The 2015 and 2016 usage records were provided via email on November 10, 2016 and November 16, 2016.

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 2016 occurred at the end of January 2016 at 1.25 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.

PTI No. 145-16

PTI No. 145-16 was issued on September 30, 2016 and is a Title V opt-out permit for VOCs. The Special Conditions (SC) are listed as appropriate.

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 October 2016 at 12.47 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 SDS's provided, the highest VOC content is in the 3075 Propylene Base Coat at 5.3 lb/gallon. On November 14, 2016 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.

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 October 2016 at 3,439 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.

40 CFR Part 63 Subpart PPPP – National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products

A May 16, 1995 memorandum authored by John S. Seitz, then Director, USEPA Office of Air Quality Planning and Standards (OAQPS), establishes and explains EPA's "once in, always in" (OIAI) policy relating to the applicability of NESHAP (or MACT) PPPP to a major source of HAP that seeks to limit emissions of HAP to reclassify as an area source of HAP. The OIAI policy states "that facilities that are major sources for HAPs on the 'first compliance date' are required to comply permanently with the MACT standard to ensure that maximum achievable reductions in toxic emissions are achieved and maintained." (Seitz, pg. 9) However,

> Today's guidance clarifies that facilities may switch to area source status at any time until the "first compliance date" of the standard. . . . By that date, to avoid being in violation, a major source must either comply with the standard, or obtain and comply with federally enforceable limits ensuring that actual and potential emissions are below major source thresholds. (Seitz, pg. 5)

Later, the OIAI policy states that "the Agency wishes to note that as long as the facility does not qualify for treatment as an area source, the facility must comply with the any applicable major source requirement under the Clean Air Act." (Seitz, pg. 7)

VOM's potential to emit an individual HAP exceeded 10 tons per year at the time VOM submitted an ROP application in 1996 and that the PTE has remained in excess of 10 tons per year throughout the intervening time up to the present. Thus, VOM was a major HAP source on April 19, 2007, the first compliance date for an existing affected source within 40 CFR Part 63, Subpart PPPP, and therefore VOM is subject to the standards within Subpart PPPP.

40 CFR 63.4490(b)(3) and 63.4552(a) – **NOT IN COMPLIANCE -PENDING** – Organic HAP emission not to exceed 0.26 lb per lb of coating solids on a 12 month compliance period as defined in Equation 3 of §63.4551. At this time the facility appears to be meeting the emission limit of 0.26 lb per lb on a monthly basis since August 2016. The facility is not in compliance with the emission limit on a 12 month compliance period. The calculated 12-month compliance period emission rate for October 2016 is 0.880 lb per lb. It is anticipated that if the facility continues to use the reformulated low HAP alternative coatings that the facility will be able to achieve compliance on a 12-month compliance period by August 2017.

40 CFR 63.4491 – **COMPLIANCE** – Shall determine whether the organic HAP emission rate is less than the applicable emission limit in 40 CFR 63.4490. The facility is pursuing compliance with the "emission rate without add-on controls option". At this time the facility appears to be meeting the emission limit of 0.26 lb per lb on a monthly basis since August 2016.

40 CFR 63.4500(a)(1) – **NOT IN COMPLIANCE -PENDING** – When using the compliant material option or the emission rate without add-on controls option the facility shall be in compliance with applicable emission limit at all times. At the time of inspection the facility appears to be meeting the emission rate of 0.26 lb per lb since August 2016. As described above, the facility is not in compliance with the emission limit on a 12 month compliance period. The calculated 12-month compliance period emission rate for October 2016 is 0.880 lb per lb. It is anticipated that if the facility continues to use the reformulated low HAP alternative coatings that the facility will be able to achieve compliance on a 12-month compliance period by August 2017.

40 CFR 63.4483(b) – **NOT IN COMPLIANCE - PREVIOUSLY CITED** - The compliance deadline for existing sources is April 19, 2007. The facility failed to submit records that demonstrate compliance with the applicable emission limit and was cited for this violation during the last inspection on January 14, 2016.

40 CFR 63.4552(d) – **COMPLIANCE** – Shall keep all records required by 40 CFR 63.4530 in the format and timeframes outlined in 40 CFR 63.4531. The facility appears to maintaining the required records.

40 CFR 63.4552 – **NOT IN COMPLIANCE -PENDING** - For any coating operation or group of coating operations using the emission rate without add-on controls option, the permittee shall demonstrate continuous compliance with the applicable organic HAP emission limit in 40 CFR 63.4490, for each compliance period according to 40 CFR 63.4551(a) through (g). The facility has demonstrated compliance since August 2016 after reformulation of coatings. As described above, the facility is not in compliance with the emission limit on a 12 month compliance period. The calculated 12-month compliance period emission rate for October 2016 is 0.880 lb per lb. It is anticipated that if the facility continues to use the reformulated low HAP alternative coatings that the facility will be able to achieve compliance on a 12-month compliance period by August 2017.

40 CFR 63.4552(b) – **COMPLIANCE** - For the emission rate without add-on controls, if the organic HAP emission rate for any compliance period exceeds the applicable emission limit specified in 40 CFR 63.4490, shall report as a deviation as specified in 40 CFR 63.4510(c)(6) and 40 CFR 63.4520(a)(6). The facility did not report deviations during the Semi-Annual reporting for January 1, 2016 through June 30, 2016. However, the facility entered Consent Order AQD No. 31-2016 on August 2, 2016 regarding the Subpart PPPP noncompliance. The facility did report a compliance status for January 1, 2016 through July 31, 2016 (received August 12, 2016). The notification indicates the facility is not in compliance with Subpart PPPP emission limits, and that the facility is working to identify a low HAP alternative.

40 CFR 63.4520 - **COMPLIANCE** - Shall submit all semiannual compliance reports as required by 40 CFR 63.4520. Each semiannual compliance report shall identify which coating operation(s) used each compliance option, and if there were no deviations from the emission limitations in 40 CFR 63.4490, include a statement that the coating operations were in compliance. As described above the facility submitted a semi-annual compliance report for January 1, 2016 through July 31, 2016 (received August 12, 2016). The notification indicates the facility is not in compliance with Subpart PPPP emission limits, and that the facility is working to identify a low HAP alternative.

CONSENT ORDER AQD NO. 31-2016

On February 25, 2016, a violation notice was issued to VOM. The violation notice cited the facility for failure to demonstrate compliance with any applicable portion of 40 CFR Part 63, Subpart PPPP. The violation notice was resolved by entry into Consent Order AQD No. 31-2016 on August 2, 2016. Compliance program and implementation conditions of the Consent Order are listed below.

Condition 9.A. No later than May 31, 2017, the Company shall comply with the numerical emission limit listed within 40 CFR, Part 63, Subpart PPPP, § 63.4490(b)(3) as evaluated over the eleven compliance periods specified within this subparagraph. For the purposes of this subparagraph, the first compliance period shall constitute the calendar month ending May 31, 2017, the second compliance period shall constitute the two calendar months ending June 30, 2017, the third compliance period shall constitute the three calendar months ending July 31, 2017; and thus the compliance periods shall continue forth in this manner until a total of eleven compliance periods are elapsed ending with the compliance period constituting the eleven calendar months ending March 31, 2018.

As described above, the facility appears to be meeting the emission limit of 0.26 lb per lb on a monthly basis since August 2016. It is anticipated that if the facility continues to use the reformulated low HAP alternative coatings that the facility will be able to achieve compliance on a 12-month compliance period by August 2017.

Condition 9.B. No later than April 30, 2018, the Company shall be in compliance with applicable requirements of Title 40 CFR, Part 63, Subpart PPPP, NESHAP for Surface Coating of Plastic Parts and Products.

It is anticipated that if the facility continues to use the reformulated low HAP alternative coatings that the facility will be able to achieve compliance on a 12-month compliance period by August 2017 and will therefore also be in compliance with Subpart PPPP.

Although the facility remains not in compliance with Subpart PPPP, as stated in this report, VOM appears to be ahead of schedule in compliance with conditions 9A and 9B of Consent Order AQD No. 31-2016, and therefore all evidence points to eventual compliance with Subpart PPPP.

PERMIT TO INSTALL EXEMPT EQUIPMENT

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

R336.1286(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(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, 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(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(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(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(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(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 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 2015 was submitted on time and was complete.

FINAL COMPLIANCE DETERMINATION

The facility is currently in compliance with MI-ROP-B4550-2012 and PTI No. 145-16. The facility is currently not in compliance with 40 CFR Part 63, Subpart PPPP. However, the facility is 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).

NAME _____ DATE 11/28/16 SUPERVISOR JK