

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

N270246098

|  |                               |                              |
|--|-------------------------------|------------------------------|
| FACILITY: Kay Automotive Graphics  |                               | SRN / ID: N2702              |
| LOCATION: 57 Kay Industrial Dr., LAKE ORION  |                               | DISTRICT: Southeast Michigan |
| CITY: LAKE ORION   |                               | COUNTY: OAKLAND              |
| CONTACT: Joshua Flood , EHS Compliance Admin   |                               | ACTIVITY DATE: 08/07/2018    |
| STAFF: Kerry Kelly   | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT     |
| SUBJECT: Evaluate Kay Automotive Graphics's compliance with PTI 305-05J, PTI 46-13, and State and Federal air quality rules and regulations. |                               |                              |
| RESOLVED COMPLAINTS:   |                               |                              |

On August 7, 2018 and September 13, 2018, I (Kerry Kelly, MDEQ) conducted an inspection of Kay Automotive Graphics and KPMF USA INVESTMENT, LLC, located at 57 and 67 Kay Industrial Drive, Lake Orion, Michigan. The purpose of the inspection was to determine the stationary source's 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; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules and Permit to Install (PTI) Numbers 305-05J and 46-13.

During the inspection the following Kay Automotive Graphics staff member assisted me:  
Joshua Flood, EHS Manager

I arrived on site at approximately 12:50 pm and surveyed the perimeter of the facility for odors and opacity prior to entry. I did not observe any odors or opacity outside of the facility.

#### FACILITY DESCRIPTION

Kay Automotive Graphics and KPMF USA INVESTMENT, LLC make up the stationary source with state registration number (SRN) N2702.

Kay Automotive Graphics operates 24 hours a day, Monday through Friday, producing original equipment manufacturer (OEM) decals for vehicles. Designs are printed on PVC film or urethane using printing presses equipped with electric infrared dryers.

KPMF USA INVESTMENT, LLC operates Monday through Friday 5:25 AM - 9:35 PM. At KPMF coating applicators are used to cast plastic film rolls and to apply adhesive or urethane clear topcoat to plastic film. Film manufactured by KPMF is purchased by Kay Automotive Graphics.

Kay Automotive Graphics and KPMF USA INVESTMENT, LLC are located in the northeast quadrant of Oakland County, Michigan. The properties immediately surrounding Kay and KPMF are primarily commercial/industrial. The closest residential area is approximately 0.15 miles northeast of Kay and KPMF.

#### PERMITS TO INSTALL

Permit to Install (PTI) Number 305-05J was issued to Kay Automotive Graphics on December 21, 2016. Processes permitted in PTI 305-05J include screen printing and washing print screens. PTI 305-05J also includes facility-wide hazardous air pollutant (HAP) and volatile organic compound (VOC) emission limits.

PTI 43-13 was issued to KPMF USA INVESTMENT, LLC on May 17, 2013. A plastic film casting/coating line controlled by a regenerative thermal oxidizer is permitted in PTI 43-13.

#### PTI 305-05J

Flexible groups included in PTI 305-05J are: FG-SCREENWASH, FG-LINES/OVENS, and FG-FACILITY.

#### FG-SCREENWASH

FG-SCREENWASH involves using solvent to wash print screens from FG-LINES/OVENS on either the printing line itself or in a special room called the screen wash room.

During the inspection, I examined the screen wash room. In the screen wash room I observed a 30 gallon solvent distillation unit, a bucket washer, and containers used for storing solvent laden rags and solvent. Mr.

Flood told me that Kay Automotive Graphics uses acetone/PM acetate to wash the print screens. The amount of cleaning solvent used is determined by measuring the liquid level in the solvent container with a ruler before and after use each day and subtracting the amount of solvent reclaimed, according to Mr. Flood. Mr. Flood stated that 100 percent of the cleaning solvent reclaimed is re-used in the screen wash process. In the screen wash room I saw the measuring stick used to measure the solvent in the containers. The containers used to store solvents and solvent laden rags were covered during the inspection.

VOC emissions from FG-SCREENWASH are limited to 18.0 tons per year in Special Condition (SC) I.1. Compliance with this emission limit is demonstrated by calculating monthly and 12-month rolling VOC emissions using gallons of cleaning material used and reclaimed, and VOC content of cleaning product used. Mr. Flood provided records of the gallons of cleaning material used and reclaimed and the monthly and 12-month rolling VOC emissions from FG-SCREENWASH for January 2017 through July 2018 (Attachment 1). The records indicate the highest 12-month rolling total VOC emissions from FG-SCREENWASH for January 2017 through July 2018 were 10.11 tons reported in January 2017. The reported VOC emissions are less than the permit limit.

FG-SCREENWASH SC II.1. limits the VOC content of the solvent used in FG-SCREENWASH to 4.03 lbs/gallon as applied. Mr. Flood provided the safety data sheet for the solvent used in FG-SCREENWASH (Attachment 2). The SDS indicates the VOC content for the solvent is 3.32 lbs/gallon. The VOC content of the screen wash solvent is less than the permit limit.

The annual solvent usage for FG-SCREENWASH is limited to 8,905 gallons. Compliance with this material limit is demonstrated through 12-month rolling records of the gallons of cleaning material used. Mr. Flood provided records of the 12-month rolling cleaning material usage and the amount of solvent reclaimed for January 2017 through July 2018 (Attachment 1). These records indicate the highest 12-month rolling screen wash cleaning solvent usage between January 2017 and July 2018 was 5,018 gallons reported in January 2017. The reported screen wash solvent usage is less than the permit limit.

#### FG-LINES/OVENS

FG-LINES/OVENS consists of eight stationary screen printing lines (EU-PRINT001, EU-PRINT002, EU-PRINT003, EU-PRINT004/EU-PRINT012, EU-PRINT005, EU-PRINT006, EU-PRINT007, EU-PRINT008), three mobile screen printing lines (EU-MOBILPRINT), and two Despatch ovens (EU-OVENLARGE, EU-OVENSMALL). Each stationary printing line includes an infrared electric dryer and two stacks. EU-PRINT004 and EU-PRINT012 share an electric infrared dryer and stacks and cannot be operated simultaneously. The mobile printers are placed next to one of the stationary lines and use the infrared dryer of the line they are placed next to. Emissions from the coating lines and ovens are released uncontrolled into the ambient air.

During the inspection, EU-PRINT002, EU-PRINT003, EU-PRINT004, EU-PRINT005, and EU-PRINT007 were operating. EU-PRINT012 was not operating at the same time as EU-PRINT004 during the inspection. EU-PRINT012 precedes EU-PRINT004 on the coating line and there is no dryer in between EU-PRINT012 and EU-PRINT004. Therefore, coating with EU-PRINT012 and EU-PRINT004 simultaneously would produce an unusable product because the coating applied on EU-PRINT012 would still be wet when it entered EU-PRINT004, causing the coatings to run together or smear. Mr. Flood explained that EU-PRINT012 is used for metallic coatings and when it is running EU-PRINT004 is a magnet.

Each coating line, oven, and mobile printer had a label identifying the name of the equipment as stated in the permit as required in FG-LINES/OVENS SC IX.1.

VOC emissions from FG-LINES/OVENS are limited to 47.5 tons per year in Special Condition (SC) I.1. Compliance with this emission limit is demonstrated by calculating monthly and 12-month rolling VOC emissions using gallons of each coating used and the VOC content of the coatings used. The coating usage is determined by weighing the coating and container before and after each use. Mr. Flood provided records of the gallons of coating used, scale calibrations conducted, the VOC content of each coating used derived from testing and formulation data, monthly and 12-month rolling VOC emissions, an example daily ink/clearcoat usage sheet per line for from FG-LINES/OVENS January 2017 through July 2018 (Attachment 1). These records indicate the highest 12-month rolling total for January 2017 through July 2018 for FG-LINES/OVENS was 24.5 tons reported in April 2017. The reported VOC emissions are less than the permit limit.

The maximum VOC content as applied of the clear coats and inks used in FG-LINES/OVENS is limited to 4.8 lbs/gallon and 6.5 lbs/gallons respectively. Mr. Flood provided records of the maximum VOC content of the clear coats and inks used each month between January 2017 through July 2018 (Attachment 1). VOC content is based on formulation data as approved by the MDEQ in 2006 (Attachment 3). In June 2014 and March 2017,

Kay had six coating samples tested for VOC content using Method 24 (Attachment 4). Mr. Flood also provided the formulation calculations for the coatings tested (Attachment 5). The VOC content based on Method 24 testing was less than or equal to manufacturer's formulation calculations for all coatings tested. Based on the usage records provided, the maximum VOC content of clearcoats used was 4.7 lbs/gallon. The maximum reported VOC content of the inks used was 6.5 lbs/gallon. The reported VOC content of the clear coats and inks are less than the permit limits.

The annual clearcoat and ink usage for FG-LINES/OVENS is limited to 8,791 gallons and 8,115 gallons respectively. Compliance with this material limit is demonstrated through 12-month rolling records of the gallons of clearcoat and ink used. Mr. Flood provided records of the 12-month rolling clearcoat and ink usage and the amount of solvent reclaimed for January 2017 through July 2018 (Attachment 1). These records indicate the highest 12-month rolling clearcoat and ink usage between January 2017 and July 2018 was 5,805 gallons and 4,550 gallons respectively. The reported clear coat and ink usage are less than the permit limits.

#### FG-FACILITY

This flexible group encompasses all process equipment at the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment. All equipment and processes at KPMF are included in FG-FACILITY.

FG-FACILITY contains the following emission limits:

Each individual HAP is limited to 8.9 tpy per 12-month rolling time period as determined at the end of each calendar month for FGFACILITY

Aggregate HAP emissions are limited to 22.4 tpy per 12-month rolling time period as determined at the end of each calendar month for FGFACILITY

VOC emissions are limited to 7.7 tpy per 12-month rolling time period as determined at the end of each calendar month for all exempt equipment (current and future) at the stationary source.

VOC emissions are limited to 89.9 tpy per 12-month rolling time period as determined at the end of each calendar month for FGFACILITY

Compliance with the HAP and VOC emission limits is demonstrated by recordkeeping requirements set forth in Special Condition (SC) VI.2, 3, and 4. Records of the 12-month rolling facility-wide HAP emissions for January 2017 and July 2018 were provided by Mr. Flood (Attachment 6). These records indicate the highest individual 12-month rolling HAP emissions were 5.122 tons per year of EB Acetate and the highest aggregate HAP emissions were 7.469 tons. The reported HAP emissions are less than the permit limits.

Mr. Flood provided facility-wide and some exempt equipment VOC emission calculations for January 2017 through July 2018 (Attachment 1). Exempt emission units that were included in the VOC calculations include: bucket washing, CAD digital plotter, mold making and cleaning, laminating, and adhesive application on print frames and dies. Mr. Flood began tracking VOC emissions from mixing processes at KPMF in August 2018. There are a few exempt processes for which VOC emissions are not being tracked at this time. The processes currently not included in facility-wide VOC calculations are: touch up painting using spray cans in the maintenance area, cold cleaner in the maintenance area, ATI Press in Vac Fill, hoods and ovens in product development, and adhesive application in tech services and slitting. Based on the description and my inspection of the exempt processes (see EXEMPT EQUIPMENT section below) for which the VOC emissions aren't being tracked, the VOC emissions are likely very low. Mr. Flood stated he will come up with a way to track emissions from these processes going forward if required. The highest reported 12-month rolling facility-wide VOC emissions were 39.26 tons reported in April 2017. The highest reported 12-month rolling VOC emissions for exempt equipment was 0.71 tons reported in January 2017. The reported VOC limits are within the permit limits.

Kay Automotive Graphics (including KPMF) reported 35 tons of VOC emissions facility-wide in MAERS for calendar year 2017.

#### **PTI 46-13**

PTI 46-13 contains one emission unit; EUCoatingLn.

#### **EUCoatingLn**

Equipment in EUCoatingLn is used to manufacturing plastic casted film rolls using coating applicators such as reverse roll, rotary screen, or knife over blade. In addition to the manufacture of plastic film, the coating line

applies adhesive, ink, or urethane clear topcoat to various plastic film surfaces. Emissions from EUCoatingLn are controlled by a regenerative thermal oxidizer (RTO).

VOC emissions from EUCoatingLn are limited to 16.7 tons per year in SC I.1. According to the permit, compliance with this emission limit is demonstrated by calculating monthly and 12-month rolling VOC emissions from coating usage. The coating usage is determined by weighing the coating and container before and after each use. Mr. Flood provided records of the gallons of coating used, scale calibration records, the VOC content of each coating used derived from testing and formulation data, and the monthly and 12-month rolling VOC emissions from EUCoatingLn for January 2017 through July 2018 (Attachment 1). These records indicate the highest 12-month rolling total for January 2017 through July 2018 for EUCoatingLn was 5.05 tons reported in June 2018. The reported VOC emissions are less than the permit limit.

PTI 46-13 requires the VOC content of coatings used on EUCoatingLn be verified using EPA Method 24. Formulation data may be used when approved by MDEQ District Supervisor. On April 21, 2015 the MDEQ Southeast Michigan District Supervisor approved KPMF using formulation data conditionally (Attachment 7). Conditions of the use of formulation data included conducting Method 24 testing one adhesive and one other solvent based material at least once per year. On November 13, 2017, KPMF had seven coating materials tested for VOC content using Method 24 (Attachment 8).

PTI 46-13 requires a non-fugitive enclosure (NFE) and the RTO be installed, maintained and operated in a satisfactory manner when EUCoatingLn is operating. Satisfactory operation of the capture system and the RTO includes ensuring the NFE is operating at a pressure lower than all adjacent areas, so that air flows into the NFE through all natural draft openings, maintaining a minimum VOC capture efficiency of 100 percent (by weight), a minimum VOC destruction efficiency of 98 percent (by weight), a minimum retention time of 0.5 seconds and a minimum combustion temperature of 1550°F. Installation, calibration, maintenance, and operation of a temperature monitoring device in the combustion chamber of the RTO to monitor and record the temperature on a continuous basis, during operation of EUCoatingLn is also required in the permit. It does not appear there is a calibration schedule for the temperature monitoring device in the permit or malfunction abatement plan (MAP). The minimum combustion chamber temperature may be adjusted based on the most recent acceptable stack test which achieved a minimum overall destruction efficiency of 98 percent, and which is specified in the MAP.

On June 4, 2015, KPMF conducted testing to verify the capture system is a NFE and the destruction efficiency is greater than 98 percent. According to the stack test results on file at the AQD, the enclosure operated under negative pressure with respect to the area outside the enclosure, the average VOC destruction efficiency was 99.85 percent, and the minimum RTO temperature was 1560 degrees Fahrenheit.

During the inspection, I observed three entrances from the hallways to the enclosure for the EUCoatingLn. Each entrance has two sets of doors. The outer doors from the hallway opened automatically then closed after I entered. The inner doors to access the coating line remained closed. When both doors were closed, air blew in from the clean room where EUCoatingLn is housed, to the vestibule. Following the short gust of air, vents at the bottom of each side of the vestibule pulled the air from the vestibule and returned it to the clean room. Next, the inner doors opened to access the room with the coating line.

The pressure drop between the enclosure and the surrounding area was - 0.01 inches water during the inspection. According to the AQD Stack Testing Observation report written by Tom Gaslioli, DEQ, TPU; Method 204 (Criteria for and Verification of a Permanent or Temporary Total Enclosure) is equivalent to -0.007 inches. There is a green light on the wall that is in the coating line operator's view. If the green light is on, the pressure drop is negative. If the green light goes off, the operator will alert maintenance. If the room cannot be returned to negative pressure by maintenance, the operator is directed to stop EUCoatingLn.

Adhesive coating was being applied during the inspection. Mr. Flood showed me the coating head while the coating line was operating. Emissions at the coating head are drawn to the RTO. All waste containers were closed at the time of inspection.

During the inspection, I saw that the RTO was equipped with a temperature monitoring device. The temperature reading was 1658 and 1620 degrees Fahrenheit at the time of the inspections. According to Mr. Flood, the alarm for the RTO is set at 1550 degrees Fahrenheit. Should the temperature fall below 1550 degrees Fahrenheit the coating line will automatically shut down. Mr. Flood provided records of the RTO operating temperature for May through July 2018 (electronic file: S:\Air Quality Division\STAFF\Kerry Kelly\RTO Temp Records\N2702). These records indicate temperature readings are recorded every two minutes. Based on Mr. Flood's reported hours of operation of EUCoatingLn and the temperature records of RTO, it appears the RTO was operating above the

minimum temperature while EU-CoatingLn was operating during the reported period and that temperatures are recorded at least once every 15 minutes. Mr. Flood stated KPMF has not yet conducted formal testing for accuracy of the thermocouple, but did just receive a quote for thermocouple verification. Services for which the quote involves are: using a TC Calibrator/TC Generator to check the accuracy of the panel devices (PLC, Chart, HTL etc.) and a Fluke to measure temperatures in the duct and compare that to the thermocouple readings.

A copy of the MAP and records of the monthly, semi-annual, and annual inspection of the RTO were provided by Mr. Flood (Attachments 9 and 10). The annual report from the manufacturer (DURR) for 2017 states the RTO "overall is in good operating condition". During the 2017 annual inspection the manufacturer suggested Kay review spare parts inventory and maintain stock of critical operation items (ie UV Detector, Amplifier card, Mod Motors, Fan Belts, etc.), cleaning lower plenum floor annually, installing additional pressure gauge, and monitoring warping Burner Tuber.

Mr. Flood stated during the inspection that there have been no instances when the MAP failed to address, or inadequately addressed, an event that meets the characteristics of a malfunction and there has been no cause to update the MAP.

### EXEMPT EQUIPMENT

I inspected forty-two processes at Kay and KPMF that appear to be exempt from the requirement in R 336.1201 to obtain a Permit to Install. The location of the exempt processes and equipment I inspected, along with my inspection observations and the corresponding applicable exemption, are described below:

#### KAY AUTOMOTIVE GRAPHICS

##### Maintenance Area

MIG, TIG, and acetylene welding vented outdoors. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(i).

Enclosed sand blasting unit emissions released to the general in-plant environment. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(l)(vi)

Touch up spray painting using 12 ounce spray paint cans of Rustoleum. Mr. Flood estimates the usage is about six cans per year. Based on usage of six cans per year (0.56 gallons) and VOC content of 4.68 lb/gallon (from Rustoleum Gloss Almond SDS) the VOC emissions would be approximately 4.7 lbs per year. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(hh)

Cold cleaner using N-methyl pyrrolidone (CAS 872-50-4). The CAS for 2 N-methyl pyrrolidone is not on the EPA's list of HAPs. N-methyl pyrrolidone is considered a VOC. Mr. Flood gave me a copy of the SDS for the solvent used in this cleaner (Attachment 11). The solvent/air interface of the cleaner is approximately four square feet. The lid on the cleaner was closed and instructions posted during inspection. The cold cleaner appears to be in compliance with R 336.1707. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1281(2)(h).

##### Vac Fill

ATI Press reaction injection mold press used to make dimensional badging for vehicles. V510 and TK295 are the components used to make badges. Mr. Flood provided SDSs for the V510 and TK295 (Attachment 12). V510 contains less than 0.25 percent Hexamethylene-1,6-Diisocyanate, which is a HAP. Kay isn't currently keeping emission records for this emission unit. According to Mr. Flood, this unit is used very rarely, but he has agreed to keep emission records for this process going forward. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(e)

##### Make Ready / Plant East Rest Rooms / Front Offices

40,000 Btu/hour, natural gas-fired water heater. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1282(2)(b).

##### Quality Control

Three Blue M electric bake ovens used to heat coated strips on plates to test for shrinking. Plates are heated to 80 degrees Celcius. Emissions are tracked through printing coating usage. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

##### Shipping/Receiving

Sixteen, 80 lb, LPG storage tanks used to fuel hi-los. These emission units appear to be exempt from the

requirement to obtain a permit to install per R 336.1284(2)(b).

#### Product Development

Three externally exhausted electric bake ovens used to heat test coatings to 200 degrees Fahrenheit or 383 degrees Fahrenheit. According to Mr. Flood, the test coating usage is a few grams per day. VOC and HAP emissions are not quantified currently. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Five laboratory hoods used when mixing small batches of test coatings. Emissions are currently not being tracked. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Ultra violet unit used for testing of test coatings. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Approximately one foot by two foot portable ATMA screen printing machine used to make decals with test coatings for physical research. According to lab personnel, this printing machine is maintained but never used. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Injection mold machine. According to Mr. Flood the machine is inoperable and never used. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(b).

Thermal formers with ceramic heater used to add texture to decals. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(d).

#### Vac Fill – Mold

Two electric ovens: An externally vented oven used for curing mold release agent Xtend 19RBU which contains 50 – 100 percent naphtha. An electric oven, not exhausted, which is used to cure molds at 380 degrees Fahrenheit. In addition, there is a mold cleaning using mineral spirits cleaning and isopropyl alcohol (IPA). Mr. Flood provided records of the VOC emissions for Vac-Fill Mold (Attachment 13). The highest reported monthly emissions were 124 lbs reported in April 2017. The reported emissions are less than the 1,000 lb/month limit in R 336.1290(2)(a)(i). These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1290(2)(a)(i).

Two heat presses heated to 350 degrees Fahrenheit used to form molds made from glass powder and resin. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1282(2)(a)(i).

#### Make Ready

Four stations used for applying adhesive (Sefar 301) to fix mesh to print screen frames. Usage is tracked and emissions are quantified. Mr. Flood provided usage records for this process for January 2017 through July 2018. The highest reported monthly usage was 14 gallons reported in March 2017. The reported emissions are less than the 200 gallon/month limit in R 336.1287(2)(c). These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(c).

#### Screen Wash

Cold cleaner (bucket wash) using a blend of 2-propanol, methoxy-2-acetate, 2-propanone, and 2-methoxypropyl-1 acetate. These ingredients are not listed as HAPs. Solvent/air interface of the cleaner is approximately eight square feet. The lid to the cleaner was closed and instructions posted during inspection. VOC emissions from the bucket wash are calculated and included in the source emissions. This cold cleaner appears to be in compliance with R 336.1707. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1281(2)(h).

One 30 gallon solvent distillation unit. Reclaimed solvent is re-used in process. This emission unit appears to be exempt from the requirement to obtain a permit to install per 336.1285(2)(u).

#### Printing

Two digital sheet numbering systems located on EUPRINT006 and EUPRINT008. Ink usage is logged and VOC emissions calculated and included in source totals. This emission unit appears to be exempt from the requirement to obtain a permit to install per 336.1287(2)(c).

Ink

Two cold cleaner (dip tanks) using a blend of water, benzyl alcohol, and monoethanolamine. These ingredients are not listed as HAPs. Solvent/air interface of the cleaners are approximately 2 square feet and 3 square feet. The lid to the cleaners were closed and instructions posted during inspection. VOC emissions from the dip tanks are not calculated and included in the source emissions. These cold cleaners appear to be in compliance with R 336.1707. These emission units appear to be exempt from the requirement to obtain a permit to install per 336.1281(2)(h).

Four stand mixers and two dispersion mixers used to mix coatings. Three mixers were being used during the inspection. The mixers in use were covered during the inspection. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(k).

Two electric bake ovens heated to 200 degrees Fahrenheit or 326 degrees Fahrenheit. Emissions from these ovens are included in the screen printing process emissions. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Die Cutting

Five radio frequency and three indirect ceramic thermoforming vinyl sheet presses used to texturize vinyl. Emissions from these machines are accounted for in the manufacturing process. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(d).

Digital Print

Four digital printers. Ink usage is logged and VOC emissions calculated and included in source totals. Mr. Flood provided records of the digital ink usage for January 2017 through July 2018 (Attachment 14). These records indicate the largest monthly usage in the reported period was 1.56 gallons reported in February 2017. The reported emissions are less than the 200 gallon/month limit in R 336.1287(2)(c). These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(c).

Laminating

Heated roll laminator used to join solid vinyl or solid urethane films together. Emissions are accounted for in EU Coating Ln. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1286(2)(d).

Tech Service Spray adhesive application using 10.25 oz cans of repositionable, 3M 75A Low VOC (<30%) adhesive. Adhesive is used in the decal drafting and design process. Mr. Brett Christie, Kay Automotive Graphics, who was applying the adhesive during the inspection, estimates he uses approximately 12 cans of adhesive per year. Based on usage of 12 cans per year (0.96 gallons) and VOC content of 3.21 lb/gallon (from 3M 75 SDS) the VOC emissions would be approximately 3.1 lbs per year. This process appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(hh).

CAD

Digital plotter with 700 mL ink cartridge and vented indoors. Ink usage is being kept and emissions are included in the source emissions calculations. Records provided by Mr. Flood (Attachment 15) indicate 1.1 gallons of were used between January 2017 and June 2018. The reported emissions are less than the 200 gallon/month limit in R 336.1287(2)(c). This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(c).

Product Development

One internally vented Roland digital printer used for product development. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Plant

One portable (non-road) 8,000 watt, 15 horsepower (approximately 153,000 Btu/hour heat input based on 25 percent thermal efficiency), Briggs and Stratton Elite Series gasoline-fired emergency engine generator used to power computers in shipping area. This engine does not appear to be subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines because it is not a stationary internal combustion engine as defined in 40 CFR 60.4248. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(g)

Die Making

CO2 laser cutter used to cut wood dies on a nonproduction basis. Emissions are vented to the ambient air

uncontrolled. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(l)(vi)(A).

Glue is used to repair wood dies or for attaching foam spacers to die board. Usage and emissions are tracked and included in the source emissions calculations. The usage records provided by Mr. Flood (Attachment 16) indicate 1 gallon of glue was used between January 2017 and July 2018. The reported emissions are less than the 200 gallon/month limit in R 336.1287(2)(c). This process appears to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(c).

#### KPMF

##### Maintenance Area

MIG welding equipment vented indoors. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(i).

Chop saw with filter that exhausts indoors. This emission unit appears to be exempt from the requirement to obtain a permit to install per 336.1285(2)(l)(vi).

Touch up spray painting using 12 ounce spray paint cans of Rustoleum. Mr. Flood estimates the usage is about six cans per year. Touch up spray painting using 12 ounce spray paint cans of Rustoleum. Mr. Flood estimates the usage is about six cans per year. Based on usage of six cans per year (0.56 gallons) and VOC content of 4.68 lb/gallon (from Rustoleum Gloss Almond SDS) the VOC emissions would be approximately 4.7 lbs per year. This process appears to be exempt from the requirement to obtain a permit to install per 336.1285(2)(hh).

##### Quality Control

Pilot coater used by Research and Development and Quality Control. Coater does not have dryer and emissions are released to the ambient air. Emissions from Quality Control counted in EUCoatingLn. Emissions from Product Development not calculated. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

Two externally exhausted electric bake ovens used by Research and Development and Quality Control to dry coatings at 390 degrees Fahrenheit. Emissions from Quality Control counted in EUCoatingLn. Emissions from Product Development not calculated. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1283(2)(b).

##### Mixing

One CB Mills RHS-30 solvent distillation unit. According to the manufacture's website, the CB Mills RHS-30 has a vertical 30-gallon capacity still with continuous oil circulation and batch size for testing of 55 to 110 gallons. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1285(2)(u).

Two cold cleaners (dip tank & mixer blade cleaner) using KS 100 (Aromatic 100). Solvent/air interface of the cleaners are approximately nine square feet and approximately three square feet. The lid to the cleaner was closed and instructions posted during inspection. Mr. Flood provided the SDS for KS 100 (Attachment 17) and the VOC and HAP emission records for the two cleaners combined. Mr. Flood began calculating emissions from these tanks in August 2018 (Attachment 18). The reported VOC and total HAP emissions for August 2018 and September 2018 combined were 32 pounds and 1.1 pound respectively. These cold cleaners appear to be in compliance with R 336.1707. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1281(2)(h).

Two mixers used for mixing coatings and liquid plastic film for EU-CoatingLn. Containers are covered during mixing. Emissions from this process are included in the EU-CoatingLn emissions according to Mr. Flood. These emission units appear to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(k).

##### Slitting

Hot melt adhesive applicator used to apply adhesive to roll for plastic film. Mr. Flood gave me a copy of the SDS for the hot melt adhesive (Attachment 19). The SDS indicates the adhesive is a solid and contains no organic solvents. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1287(2)(i).

##### Coating



One 8.6 MMBtu/hour, natural gas fired, hot oil heater. This thermal fluid heater is an indirect heater used to heat the oven for EUCoatingLn. This emission unit appears to be exempt from the requirement to obtain a permit to install per R 336.1282(2)(b).

I informed Mr. Flood that Kay/KPMF will need to start keeping VOC and HAP emissions records for all exempt equipment going forward and include those emissions in FG-FACILITY calculations.

**CONCLUSION**

Based on information collected and belief formed after reasonable inquiry during this inspection, Kay Automotive Graphics and KPMF USA LLC (SRN N2702) appears to be in 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; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) administrative rules and PTI numbers 305-05J and 46-13.

NAME K. Kelly

DATE 10/12/18

SUPERVISOR Joyce SC

