

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

N320538405

FACILITY: PACKAGING PERSONIFIED, INC.		SRN / ID: N3205
LOCATION: 122 SOUTH ASPEN STREET, SPARTA		DISTRICT: Grand Rapids
CITY: SPARTA		COUNTY: KENT
CONTACT: Allen Kupres , Plant Manager		ACTIVITY DATE: 12/15/2016
STAFF: Adam Shaffer	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled unannounced inspection		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff Adam Shaffer (AS) and April Lazzaro (AL) arrived at the facility at approximately 10:40 am on December 15, 2016 to conduct an unannounced inspection. The purpose of this inspection was to determine compliance with applicable air quality rules and regulations.

**Facility Description**

Packaging Personified, Inc. (Packaging Personified) is a manufacturer of printed plastic bags. The site is presently in operation under one Permit to Install (PTI) No. 401-96E that consists of two flexographic printing presses with associated natural gas fired drying ovens. Emissions from the presses and ovens are captured via a non-fugitive enclosure (NFE) and controlled by a regenerative thermal oxidizer (RTO). The site had previously been in operation with several permits which were voided between 2004 and 2014.

**Compliance Evaluation**

Prior to entering the site the RTO and associated stack were observed. No visible emissions were observed emitting from the stack and a slight burnt plastic odor was identified. The switching of the air flow to the two heat exchange chambers was approximately two minutes in duration.

Upon entering the site AQD staff met with Mr. Allen Kupres, Film Product Development Quality Manager, and Mr. James Wood, Plant Manager. The purpose of this inspection was explained to Mr. Kupres and Mr. Wood in further detail and included a facility walk through and a final discussion at the end. Throughout the inspection several additional representatives of Packaging Personified were contacted to discuss specific operations on site. AQD staff requested and received various records during the initial and final discussions. Following the inspection several phone calls and emails were completed to receive the remaining records. The findings of these records are discussed further below.

During the initial discussion AQD staff discussed with Packaging Personified staff on the current classification as a minor source. During the preparation for this inspection, AQD staff reviewed the facility emissions recordkeeping which showed that uncontrolled emissions of VOC are approximately 161 tons per year. PTI No. 401-96E limits VOC emissions to 15.4 tons per 12-month rolling time period, through use of a regenerative thermal oxidizer, with an underlying applicable requirement (UAR) of Rule 702(a). While the permit limits VOC emissions to levels that are below the 100 ton per year major source threshold, it does not list a UAR of Rule 205 which would indicate legally enforceable limits on the potential to emit. Additionally, the current limit is for the two printing presses only, not the entire facility. AQD staff explained this to the company and suggested that they submit a permit application and have the permit revised to include enforceable synthetic minor limitations pursuant to Rule 205 for the facility. Additionally, after further review of historical records it was determined that the CAS No. 64742-47-8 identified in PTI No. 401-96E for the Hydrotreated Light Distillates was incorrect and should be CAS No. 68410-97-9. It should be noted that this is a mistake by AQD Permits staff and not an error by Packaging Personified, and will be corrected when the company submits an application for a permit revision.

The inspection then proceeded to the walk through of the facility. The process initially starts with four blown plastic film machines of varying sizes. Polyethylene beads are vacuumed via extrusion lines from storage tanks into the blown plastic film machines where they are heated and blown into a cylindrical bubble. The stretched plastic is then air cooled and rolled into sheets. Some plastic sheets will remain unprinted while the remainder will be next sent to one of two printing presses.

Each press has a chambered ink system where ink is continuously being pumped throughout the system. While being pumped in the system, the viscosity of the ink is checked to verify the appropriate range with varying amounts of solvent added to remain within that range.

## **PTI No. 401-96E, FGFLEXOPRINT**

### **Emission Limits**

This process consists of two flexographic printing presses (EUFLEXOTECH8CL & EUFLEXO2014) and has the following emission limits:

- VOCs limited to 15.4 tpy per 12-month rolling time period as determined at the end of each calendar month.
- Hydrotreated Light Distillate (CAS No. 64742-47-8) limited to 420 lbs/yr per 12-month rolling time period as determined at the end of each calendar month.

Based on records provided the 12-month rolling time period emissions through November 2016 were 7.26 tpy and 47.1 lbs for VOC/Hydrotreated light distillates respectively and demonstrate compliance.

### **Material Limits**

NA

### **Process/Operational Restrictions**

Large quantities of numerous inks and solvents were observed consisting of three 550 gallon tanks containing new solvent and various numbers of approximately 325-gallon containers or less of various inks/solvents. Open containers of inks/solvents were observed and in one area adjacent to a printing press a strong solvent odor was noted. AQD staff and Packaging Personified staff discussed potential options to limit solvent odor/evaporative losses. A solvent distillation unit for reclaim with a rated batch capacity of thirty-five gallons was observed on site and appears to be exempt per Rule 285(u). During the inspection Packaging Personified was observed correctly storing and removing waste inks/solvents offsite.

According to Packaging Personified staff all cleaning operations within the printing presses are performed manually via rags. All waste rags are stored in a 55-gallon container to be removed off site. Following the inspection AQD staff discussed with Packaging Personified staff the weight ratio of solvents to rags per 55-gallon container that can later be subtracted from total emissions. However, each used solvent will need to have its own separate 55-gallon container for this method to be utilized. During the inspection rags for unattended cleaning operations were identified outside the NFE. Press Manager Dave Hill stated the worker had just stepped away for a moment. Uncontrolled cleaning emissions should be tracked as such and recorded.

As stated in the permit, a malfunction abatement plan (MAP) must be implemented and maintained. During the initial discussion with Mr. Dupres and Mr. Wood, AQD staff noted that the MAP currently listed was for previous onsite operations and does not cover the current NFE & RTO in place. A new MAP shall be completed and submitted to AQD by March 2017.

### **Design/Equipment Parameters**

During the inspection of the printing presses, the NFE was clarified as being a part of the press configuration and not a separate enclosure. Mr. Hall used a smoke tube to demonstrate that airflow goes into the NFE.

At the time of the inspection the temperature at the inlet of the thermal oxidizer was observed to range from above 1500°F to 1473°F which falls below the minimum temperature of 1475°F per Special Condition (SC).IV.2. However, based on SC.VI.2 Packaging Personified would be able to demonstrate a three hour temperature average of 1475°F thus demonstrating compliance.

### **Testing/Sampling**

Formulation Data Sheets were requested and provided to AQD staff for six inks utilized and cross checked with purchase order records to verify correct VOC/HAP contents identified. Minor discrepancies were identified and it was recommended to Mr. Kupres that for future use Formulation Data Sheets should be utilized for all inks/solvents to determine the VOC content. AQD staff previously indicated approval had been given; however, that was not located in AQD files. Packaging Personified shall resubmit a manufacturer's formulation data request for approval. Additionally, Packaging Personified shall keep Formulation Data Sheets for all inks/solvents available on site.

The most recent stack testing for the RTO was performed on December 2, 2014. The RTO demonstrated compliance with a temperature during testing at 1500°F which is above the set point of 1475°F at the inlet of the thermal oxidizer and a VOC destruction efficiency of 97%, which is above the minimum destruction efficiency of 96% per PTI No. 401-96E SC.IV.2.

SC.V.3 states that an initial NFE test must be performed within sixty days of the issuance of the permit and on a quarterly basis thereafter. AQD Technical Programs Units (TPU) and the District Office must be notified prior to and after the completion of the testing with a test report submitted to AQD TPU and the District Office. An initial NFE test was conducted on 12/02/2014; however, only two quarterly tests were conducted in 2015 and 2016 respectively. AQD TPU and the District Office staff were never notified of the testing. NFE testing has not been completed pursuant to permit requirements. This is a violation of SC.V.3.

### **Monitoring/Recordkeeping**

The RTO and associated control panel were observed in operation on site. The temperature values ranged from above 1500°F to 1473°F. The permit states if the RTO temperature falls below a minimum of 1475°F that a three hour temperature average may be used to demonstrate compliance.

Based on the values and range observed; AQD staff determined that the RTO was operating in compliance. After further discussion, Packaging Personified staff decided to raise the set point to 1500°F. Prior to the walk through, RTO temperature records were requested and reviewed. Several instances were observed where the temperature fell below the set point of 1475°F due to a malfunction. Packaging Personified stated that the presses shut down in response. The most recent instance was on 11/10/2016 regarding the combustion blower. The manufacturer has remote access to all controls of the RTO to allow easier determination of problems that may occur.

MSDS were provided for the solvents/select inks utilized and VOC/HAP contents identified. Minor discrepancies were identified and discussed with Mr. Kupres.

Monthly purchase records are provided to Packaging Personified by Sun Chemical that identifies the select inks that were purchased/utilized along with associated emissions. The purchase records for November 2016 were provided to AQD staff. Additionally, Packaging Personified provided purchase records for the year 2016 to AQD staff for solvents that were purchased/utilized. This was deemed acceptable to identify the materials used.

Monthly purchase records also identified VOC content for each ink purchased/utilized along with associated emissions.

A total monthly usage rate of solvents/inks was provided to AQD staff. PTI No. 401-96E SC.VI.5.c requires the usage rate to be provided for each material. This is not being done and is, therefore, a violation of SC.VI.5.c.

Record of the total monthly disposal rate is being maintained. PTI No. 401-96E SC.VI.5.d requires the reclaim/disposal rate to be provided for each material. This is not being done and is, therefore, a violation of SC.VI.5.d. The total monthly disposal rate was also being utilized in determining total tons of VOC emissions per month. This was discussed with Mr. Kupres and required to be removed from the emission calculations due to the contents likely not consisting entirely of VOCs.

Monthly and 12-month rolling total VOC/Hydrotreated light distillate emissions records were provided to AQD staff by Packaging Personified staff. It was noted to Packaging Personified staff how to correctly present a 12-month rolling time period with the records subsequently corrected and resubmitted to AQD staff.

### **Reporting**

NA

### **Stack/Vent Restrictions**

The exact dimensions of the RTO stack were not measured; however, it did not appear that any changes had occurred.

### **Additional Observations**

Following the printing presses, the plastic sheets are sent to the slitting or bagging area for final processing.

Three slitting machines and eleven gusset bagging machines were observed. During the bagging process a heated edge is used to cut the plastic sheets into select sizes. A small amount of smoke is created and captured via a fume hood above each machine and vented externally. AQD staff will follow up with the company on discussing the need for a filtering device to be implemented to capture these emissions. Once the plastic sheets have completed this process they are stored before being shipped off site.

One parts washer was observed in the vicinity of the printing presses that appeared to be exempt per Rule 281 (2)(h). AQD staff provided a cold cleaner operating procedures label to Packaging Personified staff and informed them of the appropriate operating procedures.

**Conclusion**

A closing discussion with AQD staff and Mr. Dupres was then conducted. The NFE testing violation and potential additional violations, pending a review of the remaining documents, were discussed.

Based on the review of records provided and the facility walk through, Packaging Personified was in non-compliance at the time of the inspection.

NAME adam E. Staff      DATE 02/15/17      SUPERVISOR [Signature]