

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection**

B167864441

FACILITY: GRAPHIC PACKAGING INTERNATIONAL LLC		SRN / ID: B1678
LOCATION: 1500 N. PITCHER ST., KALAMAZOO		DISTRICT: Kalamazoo
CITY: KALAMAZOO		COUNTY: KALAMAZOO
CONTACT: Steven Smock, Environmental Manager		ACTIVITY DATE: 07/28/2022
STAFF: Monica Brothers	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced scheduled inspection		
RESOLVED COMPLAINTS:		

This was an unannounced, scheduled inspection. Staff, Monica Brothers, arrived at the facility at about 8:30 am. Because this facility has had many odor complaints and confirmed Rule 901 violations in the past, I decided to assess odors in the area first before going inside the plant. Winds were out of the west at about 6 mph at that time. I drove down Paterson Street and could smell light papermill odors as I neared Riverview Drive. I also smelled light papermill odors while driving along Riverview Drive, right across the river from Graphic Packaging's wastewater treatment operations. I also drove up Gull Road to Borgess Hospital but did not detect odors there at that time. I then drove through the Riverside Cemetery. I detected light papermill odors again while driving in the cemetery on the roads closest to Riverview Drive. While papermill odors were detected off-site, they were not strong or persistent enough to be a violation of Rule 901.

I arrived at the facility at about 9:00 am and met with Steve Smock, the EHS Manager for the Mill. I explained to him what I wanted to see on the tour and the recordkeeping documents I needed to see in order to complete the inspection.

Graphic Packaging is a paper mill that makes a few thicknesses of paperboard for things like cereal boxes and tissue boxes. The facility also prints on, cuts, folds, and glues this paperboard to create final products. The facility is located in a populated area in downtown Kalamazoo, and this plays a major role in why there have been many odor complaints and violations in the recent past. The facility operates 24/7. Graphic Packaging began operations at this location in 2000, although this facility was active as a papermill before bought by GPI. They are currently operating under MI-ROP-B1678-2015 and PTI #133-19A. There are two sections to this ROP, the Mill Section, and the Carton Plant Section.

The facility recently received a new PTI (PTI #133-19A) to expand production, which included two new boilers (Boilers 10 and 11) and a new paper machine (K2). Construction is now complete, and the new paper machine started up in February 2022. Per the requirements in this new PTI, the facility no longer burns fuel oil in their boilers and uses only natural gas. In 2019, AQD escalated enforcement against Graphic Packaging because of a number of unresolved odor violations. The enforcement case is currently ongoing. The facility also has a Nuisance Minimization Plan for Odors (NMPO) that was approved by EGLE on August 18, 2022.

Gregg Lanternier, Engineering Manager, also came along with Steve and me on the facility tour. The following are summaries, by emission unit or flexible group in the facility's ROP and PTI #133-19A, of the facility tour and associated recordkeeping.

Source-Wide Conditions: This covers the emissions for both the mill and carton plant combined. They have a limit of 9.9 TPY (12-month rolling) for individual HAPs, and 24.9 TPY (12-month rolling) for combined HAPs. This includes the emissions for the boilers and clean-up solvents. Their records show that they are consistently under these limits. Individual HAPs records for July 2020 showed emission of 4.62 TPY. Combined HAPs records for June 2022 showed emissions of 14.72 TPY. These were the highest values I observed since 2019.

Section 1: Mill

EUBOILER#8: This boiler now fires only natural gas. Their new PTI #133-19A required that they no longer use fuel oil. This boiler has a max heat input of 240 MMBTU/hr and has a CEMS that records NOx during the ozone season. Records showed that they are keeping track of the hours of operation per month and per calendar day. They are also keeping track of the natural gas consumption rate per month and in tons per year (12-month rolling). They have a limit of 525 MMCF/year, and records show that they are under this limit. This limit was effective on February 2, 2022, because that is the start-up date for Boilers 10 and 11. Per PTI #133-19A, this limit was to be effective once Boilers 10 and 11 commenced operation. It has not yet been a full year yet since this condition became effective, but they seem to be under the 12-month rolling limit. They are also keeping monthly and 12-month rolling NOx emissions calculations. They have a 40.4 tpy (12-month rolling) limit for NOx, which also became effective on February 2, 2022. Records show that the facility is under this limit. During the facility tour, Boiler 8 was running at about 93.43 klbs steam/hr.

EUBOILER#9: This boiler now fires only natural gas. Their new PTI #133-19A required that they no longer use fuel oil. It has a maximum heat input of 227 MMBTU/hr and has low NOx burners and flue gas recirculation. This boiler also has a CEMS to monitor NOx emissions. They are keeping records of the natural gas consumption rate in MMCF for each calendar day and month. They have NOx emission limits of 0.06 lbs/MMBTU (24-hour average), 13.6 pph, and 59.6 tpy (12-month rolling). Their records show that they are consistently under the 59.6 tpy limit. There was an exceedance of the 0.06 lb/mmbtu limit on July 15, 2021, when emissions were reported to be 0.08 lb/mmbtu and another two exceedances between August 19, 2022 to August 21, 2022. There were also 37 exceedances of the 13.6 pph limit from August 19, 2022 to August 21, 2022. On Tuesday, August 23, 2022, Steve Smock informed me that they had had a malfunction on the Boiler 9 flue-gas recirculation system that caused these NOx limit exceedances in August 2022. As required by Rule 912, the facility sent a follow-up report about the incident within the required 10-day window. That report was received on August 31, 2022. The July 15, 2021 exceedance was never reported in an ROP Certification Report or an Excess Emissions Report. A Violation Notice will be sent for these permit exceedances. During the facility tour, Boiler 9 was not running.

FGBOILERS10-11: This flexible group consists of two 311 MMBTU/hr natural gas fired boilers that are used to heat steam for dryers and for hot water to be used on the paper machine. These boilers have low-NOx burners and flue gas recirculation. During the inspection Boiler 10 was running at 146 kpph, and Boiler 11 was running at 143 kpph. As required by PTI #133-19A, the facility submitted a Malfunction Abatement Plan on August 8, 2022. This plan was approved by EGLE on August 18, 2022. These boilers started up on February 2, 2022. They are required to keep fuel supplier records to show that they are under the sulfur content limit in 40 CFR 60.41b. Steve

showed me the fuel information from Consumers that shows the fuel is under this limit. They are also keeping records of NOx emissions using their CEMS. These records show that they are under the NOx limit of 0.036 lb/MMBTU. They recently conducted a RATA test on their CEMS units, which showed compliance. They also recently conducted stack testing for PM10 and PM2.5. The results of these tests showed that Boiler 10 was over the limit of 0.004 lb/MMBTU for PM10/2.5. A violation notice will be sent for this. Boiler 11 showed compliance with this limit but was very close to the limit. EGLE will request that both boilers be retested to show compliance with this 0.004 lb/MMBTU PM10/2.5 limit.

EUK1MACHINE: This is a paperboard machine that was installed in the 1990s and produces paper in three layers. It has an in-line coating process, uses six drying ovens to remove water, and is capable of producing 1000 tons of paper per day. They use both an air knife coater and a bar coater, and the starch prep/mix is controlled by a wet scrubber. Both K1 and K3 were operating during the facility tour. We viewed the stack for the starch prep scrubber. No visible emissions were seen coming from the stack at that time, but there was some visible white staining on the wall in back of the stack that indicated that particulate matter does sometimes get emitted, likely during cleaning or upset conditions.

Records showed that they are keeping track of lbs or tons of each VOC-containing material used per month. They are keeping track of their VOC emissions on a monthly and TPY (12-month rolling) basis. However, some of their calculations were wrong in their spreadsheet. I was able to correct these issues and found that the highest emissions since 2019 were 38.13 tpy on a 12-month rolling time basis in March of 2021. This number includes their cleaning solvent usage. They are limited to 41.4 TPY for VOC. They are not keeping track of the VOC content in lb/gal and only have it in weight percent. They have a limit of 0.5 lbs/gallon (minus water) as applied for VOC content, but they did not send me these records. A Violation Notice will be sent for this.

They are also keeping track of the lbs or tons of each formaldehyde, acrylonitrile, acrylamide, and acetaldehyde-containing materials they are using per month. They have a limit of 240 lbs/year of acrylamide, a limit of 39.8 lbs/day and 12,841.4 lbs/year (12-month rolling) for acetaldehyde, a limit of 58.8 lb/year for acrylonitrile, and a limit of 3,934 lbs/year for formaldehyde. Records show that they are consistently under each of these limits.

EUK3MACHINE: This is a paperboard machine that was installed in the 1950s and produces paper in eight layers. It has an in-line coating process, produces a third of what K1 can, and uses presses to remove water. The starch prep/mix used to vent uncontrolled outside, but about three years ago, they installed a scrubber to control emissions, like the one used on K1. We went out onto the roof to view the stack for the starch prep scrubber. There was quite a bit of debris seen around the stack, as well as some paper pieces. Visible emissions of about 5-10% were seen coming from this stack. Gregg Lanternier said that the paper pieces were likely coming from exhaust fans that were near the area where they dump bales over the pulpers.

Records showed that they are keeping track of lbs or tons of each VOC-containing material used per month. They are keeping track of their VOC emissions on a monthly and TPY (12-month rolling) basis. They are limited to 20.8 TPY, 12-month rolling, for VOC, and their highest 12-month rolling records since 2020 showed that they emitted about 10.26 tpy 12-month rolling in May 2022. This number includes their cleaning solvent usage. They are not keeping track of VOC content in lbs/gallon and only have the VOC content in weight percent. They have a limit of 0.5

lbs/gallon (minus water) as applied for VOC content, but they did not send me these records. A violation Notice will be sent for this.

They are also keeping track of the lbs or tons of each formaldehyde, acrylonitrile, and acetaldehyde-containing materials they are using per month. They are keeping records of the lbs (with water) of Acetaldehyde containing material used/reclaimed on a daily basis. They have limits of 8.2 lbs/day and 2367.9 lbs/year (12-month rolling) for acetaldehyde, and a limit of 736.3 lbs/year 12-month rolling for formaldehyde, and a limit of 11.0 lb/year 12-month rolling for acrylonitrile. Records show that they are consistently under these limits.

EUK2MACHINE: This is a paperboard machine that was installed in 2021. It has an in-line paperboard coating process and can produce 2,400 tons of paper per day. This emission unit includes the wet end process, steam heated drying cylinders, coating preparation and handling equipment, and curtain coater and drying ovens.

Records show that they are keeping track of the VOC content of each VOC-containing material, as well as the VOC emissions in tons/month and tpy on a 12-month rolling timescale. However, their 12-month rolling records were wrong for June and July of 2022. After I recalculated their data, it looks like their highest 12-month rolling VOC emissions were 17.23 tpy in July 2022. Their limit is 29.3tpy. They do not yet have a full year's worth of data to do a full 12-month rolling calculation because they started up the unit in February 2022, but they are keeping the records. They are also keeping records of the amount of natural gas burned on a monthly basis, tons of paper produced on a monthly and 12-month rolling basis (limit of 657,000 tpy), lbs or tons of each VOC-containing material used and reclaimed, lbs or tons of each acetaldehyde and acrylamide-containing material used and reclaimed, acetaldehyde and acrylamide content (with water) in % by weight of each material used and reclaimed, acetaldehyde emissions per month and per year on a 12-month rolling timescale (limit of 5,685 lb/year 12-MR), acrylamide emissions per month and per year on a 12-month rolling timescale (limit of 116 lb/year), amount of natural gas burned on a 12-month rolling timescale, and NOx emissions on a monthly and 12-month rolling basis (limit of 16.5 tpy 12-MR). Records show that they are consistently under these limits. Graphic Packaging also recently submitted an application to modify their PTI #133-19A. One of the modifications was to increase the MMBTU/hr limit from 2.8 MMBTU/hr to 5.46 MMBTU/hr for EUK2CALENDARHEAT1. Because EUK2CALENDARHEAT1 is currently over the limit of 2.8 MMBTU/hr, this is a violation of their current permit. A Violation Notice will be sent for this.

Wastewater Treatment Area: During the tour, we also walked around the clarifier and associated sludge de-watering buildings to assess the odors. This included the sludge pile, clarifier, AES building and the sludge drum filter building. Odors were observed in all of these areas except for the sludge pile.

EUK2AMU: This emission unit is for natural gas air makeup units for the K2 paper machine processes. The combined heat capacity of the units is 106.5 MMBTU/hr. They have a limit of 262.8 MMCF/yr for natural gas usage, on a 12-month rolling timescale and a NOx emissions limit of 6.6 tpy on a 12-month rolling timescale. Facility records show that they are under each of these limits.

EUK2COOLINGTW1: This emission unit is for a utility cooling tower with a 6,227 gallon per minute water flow rate. Steve sent me documentation that the unit has a vendor-certified maximum drift

rate of 0.001% or less. They are limited to total dissolved solids (TDS) of 860 ppmw. Facility records show that they are under this limit. Steve said that there has not been any maintenance, calibration, or setting changes for the blow-down system since the initial start-up of the unit in early 2022. Graphic Packaging also recently submitted an application to modify their PTI #133-19A. One of the modifications was to increase the diameter of the cooling tower stacks. The stacks are currently over the maximum diameter limit of 144 inches. A Violation Notice will also be sent for this.

EUK2STARCH: This emission unit is for a 10,600 cubic foot silo, starch preparation and handling equipment, starch application equipment, cylindrical jacket with conical discharge, and includes a dust bin vent filter. During the tour, no visible emissions were seen, and it looked like the starch mixing equipment vented internally. The dust bin vent filter only operates when the silo is being loaded. Steve said that there have not yet been any inspections on the unit or replacements of the bin filters.

EU01GASTANK: Because this unit is considered an existing stationary gasoline dispensing facility at an area source of HAPs, it has a gasoline throughput limit of less than 10,000 gallons/month. Facility records show that they are consistently under this limit, with a throughput of 689 gallons in 2021 and 561 gallons so far in 2022.

FGRULE290: This flexible group used to be for their ethylacetate emissions from EUCONVERTETHYLACETATE, but Steve said that this is no longer operating.

FGCOLDCLEANERS: They have one Safety Kleen unit in the stock-prep area that was installed in 1992. It is 6 ft² and is not heated or agitated. The solvent is 6.65 lbs/gal VOC. During the tour, the instructions were posted, and the lid was closed.

FG-RICE-MACT4Z: This is an existing fire pump with an hour meter. They are limited to 100 hours of operation per calendar year, with 50 of those hours allowed for non-emergencies and testing. Their records show that they are under these limits. Steve said that the only time this pump has operated is for maintenance and testing purposes. During the tour, the hour meter read 882.36 hours. Steve said that they inspect the unit at least annually. This is when they perform preventative maintenance, such as oil and filter changes, and inspections of hoses, belts, air cleaner, etc.

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Section 2: Carton Plant

After leaving the mill, I met with Spencer Macko, EHS Manager for the Carton Plant. This portion of the facility prints a variety of paperboard products like tissue boxes, cereal boxes, and cake mix boxes. They were making Froot Loops boxes during the inspection tour.

FGWEBPRESSES: There are now only five heat-set web-fed lithographic printing presses with in-line single roller coaters and video jet printers. Press #6 was physically removed in March of 2020. The inks are cured with ultraviolet light and they are washed manually with a solvent. During the tour, the solvents and inks were kept in closed containers when not in use. The used rags with

solvent also get placed into a closed container. Scrap pieces of trimmed paper are conveyed by ducts to balers and then sent back to the mill for reuse. They have a dust collector for this process that is vented internally and can be considered exempt under Rule 285(l)(vi)(B).

Their records show that they are keeping track of their usage rate and type of each VOC-containing material for each calendar month. The VOC content for each material is recorded and they are all under the ROP limits. The fountain solution itself has a limit of 5.0% by weight as applied. The fountain solution is shipped in a concentrated formulation with about 14.8% VOC by weight. However, they mix 5oz of this fountain solution per gallon of water, which reduces the VOC content, as applied, to below the 5.0% VOC limit. All of the inks have a non-volatile fraction of more than 60% by weight. They are keeping monthly and 12-month rolling records of their VOC emissions. They have combined limit for Presses 1,2, and 3 of 41.8 TPY 12MR and 9.9 pph, and a combined limit of 26.0 TPY 12MR for Presses 4 and 5. Their records show that they are under these limits. In September 2021, Presses 1,2, and 3 emitted 15.63 TPY 12MR, and Presses 4 and 5 emitted 11.26 TPY 12MR. In August 2021, Presses 1,2, and 3 emitted 4.63 pph. These were the highest numbers for 2021 and 2022. In 2006, EGLE staff approved an alternate method of determining the VOC content for the materials used on the web-presses than by using Method 24 testing. Therefore, they are in compliance with this permit condition.

FGRULE290: This flexible group encompasses Rule 290 emissions for all seven gluers (1-8), EUSILICONE and EUCARTON290ETHAC, which is their ethyl acetate usage. They are limited to 1000 lbs/month for each material. Records for EUCARTON290ETHAC show that their highest ethyl acetate emissions in the past year were in both February and June 2022, with 56 lbs being emitted those months. EUSILICONE is for the application of food-grade silicone to palletizer tables. Records for this emission unit show that they are consistently under the 1000 lb/month limit for VOC, Hexane Isomers (Petroleum Ether/Isohexane), and n-Hexane. The month with the highest emissions within the past year was in July 2021 with 299.73 lbs VOC emissions, 293.55 lbs Hexane Isomers emissions, and 21.01 lbs n-Hexane emissions. Records for the seven gluers showed that IPA emissions and acetone emissions were consistently far under the 1000 lb/month limit.

FGCOLDCLEANERS: There are three cold cleaners at the carton plant. They were all installed either in 1992 or 2007 and are all under 10ft² and not heated or agitated. They use either Hickory Ink Wash (5.44 lbs/gal VOC), or Zone Defense (6.66 lbs/gal VOC). The facility maintains the units themselves and stores the two solvents in solvent cabinets. The spent material gets hauled away by Univar. During the tour, the lids were closed when not in use, and the rules were posted.

Conclusion: The facility was not in compliance at the time of the inspection. A Violation Notice will be sent for multiple violations related to the mill section of the facility. Overall, the recordkeeping for the mill section of the plant needs improvement. I recommend that the facility make improvements to their records so that each recordkeeping requirement is labeled clearly, and calculations steps are easily understood.

NAME Monica [Signature]

DATE 9/8/22

SUPERVISOR RIL 9/8/22