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

A622067786

FACILITY: Intertape Polymer Group		**SRN / ID:** A6220
LOCATION: 317 Kendall Avenue, MARYSVILLE		**DISTRICT:** Warren
CITY: MARYSVILLE		**COUNTY:** SAINT CLAIR
CONTACT: Brian Newman , Operations Manager		**ACTIVITY DATE:** 06/20/2023
STAFF: Sebastian Kallumkal	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled inspection to evaluate compliance MI-ROP-A6220-2021 and applicable air regulations		
RESOLVED COMPLAINTS:		

On Tuesday, June 20, 2023, at about 10:30 AM, I, Sebastian Kallumkal, Michigan Department of Environment, Great Lakes & Energy (EGLE), Air Quality Division (AQD), conducted a targeted, scheduled inspection at Intertape Polymer Group (IPG) located at 317 Kendall Avenue, Marysville, Michigan. The purpose of the inspection was to verify facility's compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994, the Renewable Operating Permit (ROP) No.: MI-ROP-A6220-2021, the Order of Consent AQD No. 2020-14, 40 CFR 63, Subpart JJJJ-National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating; 40 CFR 63, Subpart HHHHH-National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing; 40 CFR 63, Subpart DDDDD-National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heater; and 40 CFR 60, Subpart JJJJ-Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The ROP was issued on September 29, 2021, and would expire September 29, 2026.

AQD issued PTI No. 104-80 to then Armak Company (Previously American Tape Company and currently Intertape Polymer Group) as it became subject to Reasonably Available Control Technology (RACT) standard (Rule 610) effective January 18, 1980. In response, IPG proposed installation of a vapor phase, carbon adsorption solvent recovery system (SRS) to recover toluene solvent emitted by the primary coating lines. The SRS controls portions of the three primary web coating lines as follows: EUCOATINGLINE1, B Unit Hood and B Unit Ovens; EUCOATINGLINE3, A, B, C Unit Hoods and Dryers 2, 3, 4; and EUCOATINGLINE4, B Unit Hood and B Unit Ovens. Each coating line consists of a basecoat applicator, a release coat applicator, a topcoat applicator and various drying (or curing) ovens. Emissions from the web coating lines are primarily volatile organic compounds (VOCs), with the primary VOC being Toluene, which is a hazardous air pollutant (HAP). There are four (4) carbon bed columns. Saturated carbon is stripped, and solvent is recovered using steam from a dedicated boiler. SRS Recovery Efficiency (RE) is calculated via liquid-liquid mass balance based upon rolling 30-day basis. RTO burns off rest of VOC for odor control, where it is not economical to recover solvent via adsorption.

No adhesive is alcohol (IPA) based. 30 percent of release coatings blend of alcohol and water.

These coating lines are not subject to NSPS RR, which is considered BACT (Best Available Control Technology). The lines are subject to RACT (Reasonably Available Control Technology according to US EPA's Control Technology Guidelines or CTG) SIP Rule 610.

At the facility, I met Brian Newman, Operations Manager, Jonathan Seals, EHS Manager, and consultant Rob Harvey, Services Director, Impact Compliance & Testing. I introduced myself and stated the purpose of the inspection.

The facility is located in Marysville, St. Clair County, which classified as attainment for all pollutants except some part of the county is classified as non-attainment for Sulfur dioxide. The facility is located in the area that is classified as non-attainment for SO2 standard. The facility is a major source under prevention of significant deterioration of air quality (PSD) regulations codified under 40 CFR 52 for volatile organic compounds (VOC). The facility never underwent a PSD review as the source was installed prior to the promulgation of PSD regulations. Any modifications or new installations occurred were below the significant levels.

The facility manufactures adhesives and pressure sensitive adhesive tape products. Some of the adhesives (about 95%) are used in-house and some (about 5%) is sold/sent to other facilities. The primary emission units at the facility include adhesive wet mix operations (mixers and churns), WHIP processes (EUWETMIX&WHIP-OPERATIONS), (3) pressure sensitive tape manufacturing (coating) lines and one pilot line (FGCOATINGLINES: EUCOATINGLINE1, EUCOATINGLINE3, EUCOATINGLINE4 and EUPILOTLINE). The facility operates two air pollution control devices, to control volatile organic compounds (VOC) on portions of the adhesive coating lines, namely a vapor phase Carbon Adsorption Solvent Recovery System (SRS) and a Regenerative Thermal Oxidizer (RTO). Other processes include dry ingredient Mixer (EUCOMPOUNDING) controlled by two baghouses (North and South), a continuous adhesive formulation process, SAMR, (EU-WETMIXEXTRUDER) controlled by a mechanical cyclone and a dust collector, process vessels (EU-PROCESSVESSELS), 700 HP/30 MMBtu/hr Boiler used for the Solvent Recovery System (EU-SRSBOILER), a natural gas fired emergency generator (EU-GENERATOR), two 20,000 gal underground solvent (toluene) storage tanks (FGSTORAGETANKS), various (5) parts washers (soak tanks) (FGCOLDCLEANERS), a Rule 287(c) paint booth, EU-R&DPAINTBOOTH, (FG-COATINGBOOTHS) , EU-RDPILOTLINE, and the tote cleaning process.

On June 19, 2019, IPG informed EGLE-AQD of an apparent violation of the requirements of 40 CFR 63, Subpart HHHHH (MCM MACT)-NESHAP for Miscellaneous Coating Manufacturing. Subsequent to this information, EGLE-AQD issued notice of violation on July 3, 2019, to IPG. In its response, IPG stated that the HAP containing coatings were sent offsite starting in 2016 and it had started measures to show compliance with MCM MACT. AQD Consent Order No. 2020-14 which included various compliance requirements issued to IPG with an effective date of September 10, 2020.

On September 1, 2020, IPG submitted a MACT HHHHH pre-compliance report as required by 40 CFR 63.8075(c), and Paragraph 9.B of Consent Order AQD No. 2020-14. The report indicated that Mixer #6 and Churn #6 at the site are involved in the production of adhesive coatings for both coating lines onsite and for shipments to other facilities. IPG proposed operating the condensers for both tanks between 50-100^{o}F and at an exhaust flow between 0.01 to 2.0" WC. These parameters were based on an engineer evaluation provided by the manufacturer of the installed condensers. IPG estimated that the inlet emissions to the condensers are greater than 1 ton per year. The proposed operating ranges represent the approximate exhaust temperature conditions to achieve the required mass reduction of toluene emissions per Table 1 of MACT HHHHH.

MCM MACT requires the control of toluene vapors from these process vessels whenever the HAP is present inside the vessel. General operation of these tanks includes addition of dry ingredients, filling with toluene, mixing of toluene into the batch, pump over to the churn tank, and dry out the mix tank. Prior to the addition of toluene, the manhole cover to the tank is closed sealing all openings to the tank aside from the inlet to the mix tank condenser.

Additionally, a fast purge of nitrogen gas clears oxygen in the headspace of the tank prior to the addition of toluene. Flow toluene laden vapors through the mixer condenser is caused by the displacement of headspace in the tank during the addition of approximately 250 gallons of toluene to each batch.

After the addition of toluene, a nitrogen blanket of approximately 5 CFM is applied to the mixer while the batch is continuously mixed. This flow of nitrogen through the condenser contains toluene vapors.

Once the batch has been mixed, the materials is pumped from Mixer #6 to Churn #6, which serves as a holding tank for Mixer #6 allowing new batches to start in the mixer. The product is cooled in the continuously agitated churn and get prepared for loading into a DOT approved transport tank. The displacement of headspace in the churn tank is exhausted to the churn condenser.

Once the pumping of product from the mixer to the churn is completed, nitrogen (approximately 67 CFM) is pumped through the mixer to remove any remaining toluene from the mix tank before the start of the next batch (nitrogen dryout, about 45 minutes). This nitrogen purge is routed to the churn condenser to avoid any toluene condensate from being introduced into the Mixer #6. The condensed toluene drains into the Churn 6. After going through the condenser, nitrogen exists the system through a conservation vent and released to the atmosphere.

While adhesives are mixed, a nitrogen blanket is added to the churn. Exhaust from this nitrogen purge is vented to churn condenser. The condensed toluene drains into the Churn 6. After going through the condenser, nitrogen exists the system through a conservation vent and released to the atmosphere.

Periods of flow through each of the two condensers is determined based on the total pressure measured at the top of each condenser.

For the preparation of adhesives (coatings) that are used in-house, the dry ingredients are added to the toluene-free mixers, mixed, and toluene is added. Nitrogen is flown through the mixer. This nitrogen purge is exhausted through a condenser. After mixing is completed, the mix is pumped to a churn. While the mixing continues in the churn, nitrogen (dryout) is purged through the mixer to remove any remaining toluene. This exhaust is vented to the general in-plant area. While being mixed in the churns, a nitrogen blanket is added. The exhaust from this nitrogen purge is vented to the outside atmosphere.

The facility has three mixers including the Mixer #6 and had four churns. The mixers and churns are stationary.

The exhaust from all mixers (for coatings used in-house and sent offsite) during the addition of dry ingredients is collected via through two small hoods (approximately 2" x 6") located at both sides of the mixers and is vented outside to the ambient air.

From the churns, the adhesives are pumped to totes and are whipped in the WHIP room for in-house use or to a DOT container for shipping. From the totes, the adhesives are pumped to the coating lines.

During the pre-inspection meeting we discussed facility's operations and other concerns. The facility has about 240 employees and operates 24 hours per day, and 7 days per week with a couple of weeks of shut down for maintenance. Facility had no change in its operations.

We also discussed the following items:

Recently, EGLE-AQD revised Part 6 of the Michigan Administrative Rules as part of the State Implementation Plan (SIP) to meet the 8-hr ozone standard. EPA recently classified southeast Michigan in which St. Clair County is located as attainment for 8-hr ozone standard. Therefore, these part 6 rules are not applicable to this facility.

AQD had requested information regarding 40 CFR 63, Subpart DDDDD-Boiler MACT compliance for the two permit to install exempt boilers (EUOBOILER- 0.812 MMBtu/hr, natural gas fired, office boiler, installed in 1954; EUBLDG41BOILER, 5.2 MMBtu/hr, 125 HP, natural gas fired, Building 41 boiler, installed in 1954 and EURECUREOVEN, 0.41 MMBtu/hr, natural gas fired Recure oven in B warehouse).

On June 29, 2023, IPG provided the following information:

EUBOILER (812,000 BTU/hr Office Boiler. Installed in 1954)

This boiler is used for office heating. It does not make steam and has a heat input capacity less than 1.6 MMBtu/hr. Therefore, it qualifies as a "hot water heater" and is not subject to the Boiler MACT per §63.7491 Are any boilers or process heaters not subject to this subpart. A hot water heater is defined in §63.7575:

> ***Hot water heater*** **means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water.**

EUBLDG41BOILER (125 HP (5.2 MMBTU/hr) Building 41 Boiler, Installed in 1954)

Regarding EUBLDG41BOILER, IPG responded that "This boiler is currently idle and is maintained only as an emergency backup. Based on a review of facility information, we determined that the boiler was in use up to September 2019 and was shut down when the new solvent recovery system boiler (SRS Boiler) was started. It has not operated since that time.* The Boiler MACT compliance date is 1/31/2016 for existing boilers. If this boiler were to be restarted, it would be subject to limited requirements from the Boiler MACT as an existing unit using a Category 1 fuel (natural gas); primarily a two-year tune up requirement. This timeline could be extended if the boiler is categorized as a limited use boiler.

We will follow up on whether Intertape intends to permanently disable this boiler or maintain it as a backup and bring it into compliance with the Boiler MACT.

***Note: This information is different than what was communicated during the 6/20/23 inspection meeting. During the meeting we indicated it had not operated since at least 2015 based on a spreadsheet of gas meter volumes. We later determined that the boiler does not have an individual fuel meter and gas use had been supplied (up until Sept. 2019) through the general plant natural gas fuel meter."**

IPG operated EUBLDG41BOILER after the NESHAP 5D compliance date. The facility appears to be in violation of the BOILER MACT requirements such as Initial Notification, Notification of Compliance Status, Report of initial 2-year tune up after

the compliance date, one-time energy assessment, etc. Later, discussed this matter with Warren AQD District Supervisor and decided that a Violation Notice (VN) requesting compliance with the NESHAP 5D requirements needs to be issued to IPG. (See further discussion under EUBLDG41BOILER)

EURECUREOVEN (Recure oven in B Warehouse, natural gas fired, 0.41 MMBtu/hr)

The recure oven is a batch-type oven where roll(s) of tape with uncured or partially cured adhesive are loaded to finalize the curing process at elevated temperature (250°F). The natural gas burner is affixed directly to the unit, and it is our understanding the heat is transferred directly to the oven contents as opposed to indirectly as described in the Boiler MACT definition below. Since it uses direct fired heating, it does not qualify as a process heater under the Boiler MACT and is not subject to the Boiler MACT.

Process heater **means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a process heater unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition.**

Michigan Administrative Rule R336.1103(k) defines that a "Coating line" means an operation which is a single series in a coating process, and which is comprised of 1 or more coating applicators and any associated flash-off, drying areas, and ovens wherein 1 or more surface coatings are applied and subsequently dried or cured.

Brian also explained that additional ambient air is introduced to the RTO during its operation as make up air if not all three coating lines are not operated. During start up fresh air introduced to the RTO.

Condensers for Mixer #6 and Churn #6 are chilled using water and the exhaust temperature for each is kept less than 85^{o}F.

They indicated that they are monitoring the static pressures of exhaust from all ovens and dryers to verify continuous compliance with the capture efficiency of the SRS and the RTO. They explained that the capture efficiency of the SRS can also be verified by the amount of solvent collected.

Regarding deviations reported in the semi-annual reports, IPG explained that during nitrogen dryout of the Mixer #6, the operator vented the exhaust to the general in-plant area instead of venting to the Churn #6 condenser. IPG calculated the VOC emissions and reported. They indicated that this was an operator error, and they are properly trained.

We also discussed facility's MAERS report which stated that only 50% of the totes are washed and 90% of the wash solvent is recovered. They explained that only 50% of the totes are washed because some of the totes can reused without being washed. The spent wash solvent with coatings is re-introduced to in the totes in the next batch and they estimate that 95% of the used solvent used is collected and reused.

I was informed later that the DOT totes that are used to send adhesives to other sites are sent to a contract (third-party) tote cleaning company. The clean totes are shipped back to IPG Marysville for reuse.

After the pre-inspection meeting, they accompanied me for an inspection of the facility. Initially we inspected the coating lines. All three coating lines were operating at the time of my inspection.

In Line 3, the R-Unit Hood (R-Unit Floor) where water-based Release Coat is applied is vented to the atmosphere. IPA/QBX unit hood where IPA/QBX (mostly IPA) coating is applied and Dryer 1 after the IPA/QBX hood are vented to the atmosphere. The emissions from Dryer 1 after the R-Unit Hood and QBX Unit hood are directly vented to the RTO. The A-Unit Hood, B-Unit Hood, and C-Unit Hood where solvent based adhesive coatings are applied and the subsequent Dryer 2, Dryer 3 and Dryer 4 are continuously controlled by SRS. Dryer 5 emissions and Exit hood emissions are vented to the atmosphere. A base coat adhesive would be applied at the A-Unit hood if reinforced tape products are made. This is a thin coat of solvent adhesive. The LEL for the dryer emissions are monitored. Similarly, the vents for these dryers are also monitored for bypass monitoring. Static pressure is monitored to verify continuous compliance with the capture efficiency. An operator cannot accidentally or intentionally direct the Line 3 vents to bypass while the process is running. Brian informed me that emissions from R-unit hood/IPA/QBX hood are vented to the atmosphere, a notification is sent to the operator to approve the venting to the atmosphere. The dryers on Line 3 are natural gas fueled.

The turn switch for dryer and oven vents are calibrated on a monthly basis by someone physically inspecting the dampers on the roof, the operator switches and the CPMS display. The system will alarm at the coater station, in maintenance, in the solvent recovery control room and over the plant radio system if not in "Collect" while running.

I observed couple of parts washers while visiting the coating lines. The covers for parts washers were closed and the operating procedure was posted nearby.

Coating Line 3: Dryer 5 static pressure readings ("WC) (Vented to RTO)

Zone 1,	Zone 2,	Zone 3,	Zone 4
0.55	0.60	0.9	0.35

An acceptable capture efficiency testing for Line 3 has not been conducted yet. Below shows k "IPG static pressure readings" which summarizes the static pressure recorded during the compliance tests and the 75% minimum value.

	Test date	4/26/2017	4/26/2017	4/26/2017	4/26/2017
	Line No.	Line 3	Line 3	Line 3	Line 3
	Dryer ID	D5 Zone 1	D5 Zone 2	D5 Zone 3	D5 Zone 4
Test 1	Begin	0.73	0.79	0.90	0.58
Test 1	End	0.75	0.70	0.89	0.54

Test 2	**Begin**	**0.69**	**0.68**	**0.89**	**0.54**
Test 2	**End**	**0.72**	**0.63**	**0.85**	**0.58**
Test 3	**Begin**	**0.79**	**0.78**	**0.98**	**0.59**
Test 3	**End**	**0.70**	**0.67**	**0.80**	**0.53**
Test 4	**Begin**	**0.74**	**0.78**	**0.82**	**0.51**
Test 4	**End**	**0.75**	**0.77**	**0.99**	**0.61**
	Test Average	**0.73**	**0.73**	**0.89**	**0.56**
	75% of Test Avg.	**0.55**	**0.54**	**0.67**	**0.42**

December 8, 2022 Capture efficiency testing for Coating Line 3

Note: This test did not pass Method 204 QA requirements

	Test date	**12/8/2022**	**12/8/2022**	**12/8/2022**	**12/8/2022**
	Line No.	**Line 3**	**Line 3**	**Line 3**	**Line 3**
	Dryer ID	**D5 Zone 1**	**D5 Zone 2**	**D5 Zone 3**	**D5 Zone 4**
Test 1	**Begin**	**0.64**	**0.74**	**0.98**	**0.39**
Test 1	**End**	**0.70**	**0.76**	**0.99**	**0.41**
Test 2	**Begin**	**0.65**	**0.75**	**0.98**	**0.45**
Test 2	**End**	**0.70**	**0.74**	**0.97**	**0.36**
Test 3	**Begin**	**0.70**	**0.74**	**0.97**	**0.36**
Test 3	**End**	**0.69**	**0.76**	**0.99**	**0.39**
Test 4	**Begin**	**0.69**	**0.76**	**0.99**	**0.39**

Test 4	End	0.70	0.77	0.98	0.38
	Test Average =	0.68	0.75	0.98	0.39
	75% of Test Avg. =	0.51	0.56	0.74	0.29

Next, we inspected Coating Lines 1 and 4. These are located in the same room. In Line 4, the web goes through the R-unit hood where Release Coat/silicone coating is applied (uncontrolled – water-based). Line 4 was operating at the time of the inspection. The web then goes through the R-oven (uncontrolled due to water-based coating). From there the web travels to the A-Unit hood where an adhesive base coat is sometimes applied. The base coat contains minimal amount of VOC and HAP. If basecoat is applied, the A-hood emission and A-oven will stay in collect mode and solvent laden air (SLA) goes to the RTO. This A-oven can manually be switched to atmosphere but will also automatically switch to RTO if LEL's of 10% or more are detected. This material usage is included in the VOC and HAP calculations.

The B-Unit Hood where solvent based adhesive coatings are applied and the B-Unit Oven emissions are vented to the SRS while the C-Ovens (C1, and C2 ovens) emissions are vented to the RTO. The C3 Oven is vented to the atmosphere. The LEL for all oven emissions are monitored. The static pressures for these ovens are monitored to verify capture efficiency of the control equipment. Similarly, the vents for these ovens are also monitored to verify bypass. The ovens are electrically heated.

Coating Line 4: C Oven (vented to RTO)

C1 C2

0.19 0.24

These static pressure readings are less than the readings taken during the April 2022 performance test runs.

	Test date	4/27/2022	4/27/2022	4/27/2022
	Line No.	Line 4	Line 4	Line 4
	Dryer ID	A Oven	C1 Oven	C2 Oven
Test 1	Begin	1.91	0.33	0.28
Test 1	End	1.87	0.32	0.29
Test 2	Begin	1.90	0.31	0.28
Test 2	End	1.85	0.32	0.28

Test 3	**Begin**	**1.87**	**0.32**	**0.29**
Test 3	**End**	**1.86**	**0.32**	**0.29**
	Test Average =	**1.88**	**0.32**	**0.28**
	75% of Test Avg. =	**1.41**	**0.24**	**0.21**

C1 oven static pressure observed during inspection was slightly lower than the minimum static pressure. How ever this was an instantaneous reading. IPG needs keep the static pressure of RTO controlled ovens above the minimum level.

Coating Line 1 was operating at the time of my inspection. IPG uses release coat/silicone coat in the R-unit hood and a base coat in the A-unit hood. IPG informed me that the release coating is a water-based material that contains a small amount of VOC (alcohols) but does not contain HAPs. All release coat emissions (R unit hood and R unit oven) are vented to atmosphere with no add-on controls. IPG calculates the VOC emissions from the release coat usage as uncontrolled. All A-unit emissions are collected and controlled except for one coating that is used for a specific product line that is water-based and contains no VOC. There is no longer a control strategy based on 10% LEL. If the unit is using an adhesive coating, it is collected and vented to the control system (except the one coating mentioned above.). B-Unit Hood where solvent based adhesive coatings are applied and the B-Unit Oven emissions are vented to the SRS while the C-Ovens (C1 and C2 ovens) emissions are vented to the RTO. The Exit oven emissions are vented to the atmosphere. The ovens are electrically heated.

Coating Line 1: C Oven static pressure readings (“WC) (Vented to RTO)

C1 C2

1.34 1.25

These static pressure readings above the average readings taken during the April 2022 performance test runs.

	Test date	**4/21/2022**	**4/21/2022**	**4/21/2022**
	Line No.	**Line 1**	**Line 1**	**Line 1**
	Dryer ID	**A Oven**	**C1 Oven**	**C2 Oven**
Test 1	**Begin**	**1.822**	**1.086**	**1.045**
Test 1	**End**	**1.777**	**1.095**	**1.055**

Test 2	Begin	1.784	1.072	1.057
Test 2	End	1.789	1.066	1.024
Test 3	Begin	1.785	1.064	1.033
Test 3	End	1.813	1.096	1.057
	Test Average =	1.80	1.08	1.05
	75% of Test Avg. =	1.35	0.81	0.78

I observed an open bucket (5 gallons) of liquid nearby coating line 1. I pointed this out to Brian. He told me it is toluene. I told Brian that all solvent containers should be closed at all times, as practical. He agreed to have the container closed immediately.

Next, we inspected the EUCOMPOUNDING. In this Banburry process the natural rubber (301L) is grounded into smaller pieces and mixed with dry powder fillers, and zinc oxide, to produce dry stocks. The process is controlled by two baghouses (north and south). They operate the process three shifts a day and five to six days per week. During the inspection, I observed that differential pressures were 1.3" WC for the South Shaker baghouse and 1.5" WC for North Shaker baghouse. The process was operating at the time of my inspection. The operators usually shake the bags during second shift. They keep logs of the pressure drop readings before and after each shake. IPG also keeps a log of the baghouse maintenance activities.

Next, we visited the Wet Mix area. As mentioned earlier, in Mixer #6 and Churn #6, IPG occasionally produces adhesive coating to be send offsite. While these coatings are produced, the Mixer #6, Churn #6, and process vessels are subject to MCM MACT (Part 63, Subpart HHHHH). The emissions from these vented to individual condensers. The exhaust gas temperatures of these condensers are monitored to comply with the MACT requirements.

MCM MACT requires that IPG reduce the emissions of toluene from the process by 75% as the vapor pressure of the toluene during the process is great than 0.6 kPa. Compliance with this emission reduction will be based on the average outlet temperature of data collected at least once every 15 minutes using a continuous parametric monitoring system (CPMS) during production of subject batches. The operating limit for maximum exhaust vapor temperature is 85^{o}F. IPG is also required to identify the periods of flow through control devices due to the intermittent nature of flow through the closed vent condensers. IPG has installed a pressure monitoring system to determine periods of flow based on increased pressure through the condenser. Periods of elevated pressure indicate the movement of exhaust vapor from the process vessels, through the controlling condensers, and towards the exhaust vent. The operating range for the exhaust flow indicator is 0.01 to 2.0" WC.

Initially, we inspected the mixers that produce adhesives for in-house use. The exhaust from the mixers (4 & 5) while adding dry materials are collected through side

vents and exhausted to the ambient air. The mixer is open during this mixing. A nitrogen blanket is added during the addition of toluene. This nitrogen purge emissions are vented to a condenser. This condenser is not permitted, and the exhaust temperature is not monitored. After mixing with toluene, the adhesive is pumped to a churn and mixing is continued in the churn. After the transfer of the adhesive to the churn, the mixer is dried out using nitrogen. This process is vented to the general in-plant atmosphere. From the churns, the adhesives are pumped to totes which are transferred to the WHIP room for continuous whipping.

During the production of coatings send offsite, the nitrogen purge during toluene addition is vented to the Mixer #6 condenser. The toluene vapors are condensed back to the mixer during this process. During the dryout process, the toluene vapors routed to the churn condenser and the vapors are condensed back to the churn. After mixing, the adhesive coatings are transferred to DOT approved tanks and shipped out.

Condenser exhaust temperature for Mixer #6 was 82.8^{o}F

Condenser exhaust temperature for Churn #6 was 77.6^{o}F

In the WHIP room, additives (curing agents and catalysts) are added to the adhesive totes to obtain the correct specifications. The totes are placed on WHIP stand with large WHIPs. The adhesive totes are then connected to each coating lines. The facility has two large WHIPs and three small WHIPs. The totes are covered while whipping. When the process is complete, the employee collects a sample for analysis. During this process of collecting samples, the tote covers are opened, and solvent vapors are released in the room. WHIP room emissions are included in the emission calculations.

The totes are cleaned in the Tote Cleaning Stand using toluene. It is a closed loop system. The spent solvent is reused in the wet mix process as required. The cleaning solvent (Toluene) is recycled through a surge tank.

Next, we visited the new SAMR extruder process. In May 2013, the facility started the installation of SAMR (Solvent Adhesive Mixing Research) Extrusion Unit. It is a combined process to make adhesive. The rubber grinding process and solvent mixing process are combined in this unit. This could replace two of the four mixers. The process is also equipped with a dust collector. I observed a small toluene tank nearby the SAMR process. AQD received permit to install (PTI) application for this process on April 16, 2014. PTI No. 81 -14 is effective since September 30, 2014. Brian informed me that the project is still in its testing phase. Never started production due to various issues.

Next, we inspected the regenerative thermal oxidizer (RTO) which controls VOC emissions from the Line 1-R or A Oven, Line 1- C Ovens, Line 4-A Oven, Line 4-C (C1 and C2) ovens, and Line 3-Dryer 5 and the pilot line. The RTO contains 3 chambers which aids in the regeneration of heat. The solvent laden process exhaust travels through one of the chambers, warms up through heat exchange, undergo thermal incineration and cools down through another chamber and vented out through the stack. The third chamber is in "STANDBY" mode during this process. The combustion temperature is continuously recorded both electronically an on the paper chart. I walked around the RTO system. I did not observe any visible emissions from the RTO stack. The external structure of the RTO appears to be in

good condition with no obvious deformities, leaks, or other irregularities. RTO Temperature were at 1464ºF and 1438ºF.

Next, we inspected the solvent recovery system (SRS). The solvent laden exhaust air initially goes through filters and coolers to remove any particulates and to reduce the temperature for adsorption. Then the exhaust air goes to one of the three carbon beds. While three of the four beds are adsorbing, the other one will be desorbing. The temperature and VOC concentration of the exhaust from carbon beds are monitored. The VOC concentration in the exhaust determines which bed is absorbing and desorbing. The beds are desorbed using steam. The condensed steam and solvents are collected in a Condensate Tank. From this tank, the mixture goes to a Decanter Tanks where toluene and water is separated due to gravity. From this tank, the toluene (solvent) goes to the toluene tank and the water goes to the water tank. From the toluene tank toluene is metered (2 meters in series) and stored in one of the two underground storage tanks. I walked around the SRS system. Each bed has an exhaust vent. I did not observe any visible emissions from the vents. I observed leaks on the ground near the cooling tower. I pointed out this to Brian. He informed me that this will be taken care of during summer shutdown.

The solvent recovered is measured by two meters connected in series. The readouts for these meters are located inside the control room. The operators read the meters in the morning.

The facility continuously monitors the VOC concentration in the SRS exhaust and is used to step the process ahead. These readings are not recorded. I did not verify these readings during the inspection.

FT#1: 28800.772 gallons

FT#2: 28825.238 gallons

Next, I inspected the pilot line and the paint booth. The paint booth is rarely used, and filters appears to be in good condition The pilot line uses solvent based adhesive. It is used 2- 3 times per week and 8 hours per day. The pilot line or the paint booth was not being used at the time of my inspection. The paint booth did not appear to have used for some time. The operator told me that the paint booth is only used 2-3X per year. They are using a paper saturator, about 1-2 times per month.

Facility uses Compliance Monitoring System (CMS) which includes various Continuous Parameter Monitoring System (CPMS) required to monitor pursuant to 40 CFR 63.3350(e). The CPMS monitors RTO temperature (instantaneous, hourly and 3-hour average), Liquid (solvent) flow from the SRS, damper positions for the oven/dryers/hoods (vent/collect), baghouse differential pressures, vent static pressures, and dryer/oven LEL.

Facility keeps a database for coating information, raw material information, product information and VOC calculations. A product refers back to the coating and coating will include the materials used. They know how much coated and use this data to calculate the lb VOC/gallon coating, or solids, etc.

In October 2013, facility installed an R & D Pilot Line which includes adhesive manufacturing unit and a coating line. The installation of this process is exempt under Rule 290. This unit

currently produces non-solvent adhesive coating. This is located in Building 42, in the same building as the EU-PILOTLINE. I did not visit this process during the inspection.

Next, we inspected the Recure Oven (EU-RECUREOVEN) which is used for further curing the tape rolls. This is natural gas fired. It is used only occasionally and was not operated at the time of the inspection. Brian told me that the direct flame from the burners heat the rolls to cure.

During a post inspection meeting, we discussed the additional records that needs to be submitted.

EUCOMPOUNDING:

The baghouses are shaken every 2 hours and pressure differential readings are taken every shift. The audible alarm is set for above 3.0" WC. The collected dust is reused in the process. In the company's Preventive Maintenance Plan (PMP) for the baghouses the pressure drop range is identified as from 0.75" WC to 3.0" WC. The company keeps records of the pressure drop readings data. Review of this data shows that the pressure drop was within the range. The shake outs are still done manually.

EU-PROCESSVESSELS:

Includes stationary or portable tanks or other vessels with a capacity greater than or equal to 250 gal and in which mixing, blending, diluting, dissolving, temporary holding, and other processing steps occur in the manufacturing of a coating, as defined in 40 CFR 63.8105(g). Provisions of the Miscellaneous Coating Manufacturing MACT are applicable only when the coating manufacturing operations produce adhesive that is not used in affiliated operations at an affected source under the POWC MACT.

The Whip Tank, Mix Tank #6, Churn Tank #6, are involved in the production of adhesive coatings for use in coating operations subject to Paper and Other Web Coating (POWC) Maximum Available Control Technology (MACT) Standards under 40 CFR 63, Subpart JJJJ. This adhesive production equipment also produces coatings that are packaged and shipped to other facilities making the equipment subject to the requirements of the Miscellaneous Coating Manufacturing (MCM) MACT standards, 40 CFR 63, Subpart HHHHH. The hazardous air pollutant of concern, toluene, is stored in two underground storage tanks (Toluene USTs) and transferred to adhesive production process via pipe. The predominant use of the Toluene USTs is associated with the manufacture of adhesive coatings used in the on-site coatings operations subject to the POWC MACT; therefore, per 40 CFR 63.7985(c), the toluene USTs are exempt from the requirements of the MCM MACT. A Predominant Use Determination of the Toluene Storage Tanks was submitted to AQD on November 5, 2020.

EU-EQUIPMENTLEAKS

All affected miscellaneous coating manufacturing equipment in organic HAP service, except for equipment that is in service less than 300 hours per year, equipment in vacuum service, or equipment contacting non-process fluids.

Provisions of the Miscellaneous Coating Manufacturing MACT are applicable only when the coating manufacturing operations produce adhesive that is not used in affiliated operations at an affected source under the POWC MACT.

EU-WETMIXEXTRUDER

Continuous adhesive formulation process integrating the dry material compounding and mixing/blending operations. Consists of: rubber grinding station with mechanical cyclone, four (4) dry stock bulk bag loading stations controlled by a dust collector, dry stock manual loading stations, a 500-gallon toluene surge tank, various pumps and meters, an extruder equipped with a water jacket cooling system, and a final adhesive mix tote loading station. This unit is not in production yet.

FGCOATINGPROCESS:

The flexible group includes three web coating lines (Line 1, Line 3 and Line 4) and one pilot web coating line. The three web coating lines are controlled by a vapor-phase carbon control adsorption solvent recovery system (SRS) and a regenerative thermal oxidizer (RTO) unit. The adhesive coating hoods and dryer zones emissions are controlled by the SRS and cure zone emissions are controlled by the RTO.

Currently, the A-ovens of Line 1 and 4 are controlled by RTO. The coating units prior to the A-oven of these coating lines are capable of coating with solvent or water-based basecoats, therefore, the oven can be either controlled by RTO or vented to atmosphere. To ensure that the ovens are not accidentally set to the "vent" setting during the application of a solvent-based basecoats, additional controls were implemented to include auto collect ready lights and alarm for these ovens. The-ovens automatically default to the "collect" setting. However, if the operator sets the oven into "vent", an alarm and light will be activated at the operator's station requesting that the operator confirm the "vent" setting. After the production of that particular product, these ovens default back to "collect". The coating unit prior to B-oven in Line 4 is capable of coating with solvent or water-based adhesives, therefore, the oven can be either collected by solvent recovery or vented to the atmosphere. To ensure that oven is not accidentally set to the "vent" setting during an application of a solvent – based adhesive, additional controls were implemented which include auto collect ready lights, and alarm for the B-Oven on Line 4. The B-oven defaults to the collect setting. How ever if the operator sets the oven to "vent" during the coating of a water-based adhesive, an alarm and light will be activated at the operator's station requesting that the operator confirm the "vent" setting. After the production of that particular product, the B-Oven default back to "collect". The static pressures for the oven/dryer vents which are controlled by the RTO is monitored continuously.

The pilot line is used for testing the coatings. It was not in-use at the time of my inspection. It is located in a separate room than the other coating lines. The emissions from the pilot line are controlled by RTO.

FG-BOILERMACT

This flexible group includes, EU-SRBOILER, 700 HP (30 MMBTU/HR) boiler for Solvent Recovery System (SRS), Installed in 2019. This unit is exempt from permit to install requirements by R336.1282(2)(b)(i). Flexible group includes requirements for a new boiler and process heater that are designed to burn gas 1 subcategory fuel with

a heat input capacity of 10 MMBTU/hr or greater at major sources of HAP emissions per 40 CFR Part 63, Subpart DDDDD (Boiler MACT). Units designed to burn gas 1 subcategory fuels include boilers or process heaters that burn only natural gas, refinery gas, and/or Other Gas 1 fuels. Units that burn liquid fuel for testing or maintenance purposes for less than a total of 48 hours per year, or that burn liquid fuel during periods of curtailment or supply interruptions are included in this definition. These new boilers or process heaters must comply with this subpart upon startup.

FG-BOILERNSPS

Natural gas fired 30 million BTU per hour EU-SRSBOILER. The boiler is subject to New Source Performance Standards specified in 40 CFR, Part 60, Subparts A and Dc. This flexible group includes NSPS requirements.

FG-EMERGJJJJ

FG-EMERG-JJJJ consists of EU-GENERATOR, an emergency, stationary, spark ignition (SI) internal combustion engines (ICE) with a maximum engine power greater than 19 KW (25 HP) that commence construction on and after January 1, 2009, which are subject to 40 CFR Part 60, Subpart JJJJ-The Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

FG-MACT HHHHH

This flexible group includes MCM MACT requirements for EU-WETMIX&WHIP-OP, EU -PROCESSVESSELS, and EU-EQUIPMENTLEAKS. Each new and existing miscellaneous coating manufacturing operation as defined in 40 CFR Part 63, Subpart HHHHH, 63.7985(b) that meet the conditions specified in 40 CFR 63.7985(a) (1) through (4). Provisions of the Miscellaneous Coating Manufacturing MACT are applicable only when the coating manufacturing operations produce adhesive that is not used in affiliated operations at an affected source under the POWC MACT.

FGRULE290

This flexible group includes EU-RDPILOTLINE. This process is exempt from permit to install requirements pursuant to Rule 290 which exempts any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification.

FG-COATINGBOOTHS

This flexible group includes EU-R&DPAINTBOOTH. This process is exempt from permit to install pursuant to Rule 287(2)(c) which exempts any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 287(2)(c). Emission units installed/modified before December 20, 2016, may show compliance with Rule 287 in effect at the time of installation/modification.

This unit is located in the same building as the pilot line. The company uses very little coating and keeps records of the coating usage. They use this to test the "painter's tape". The booth was not in use at the time of our inspection.

FGCOLDCLEANERS:

The facility has five cold cleaners (soak tanks) onsite. I inspected four of these cold cleaners. The covers for the parts washers near the coating lines were closed. The parts washer in the maintenance uses mineral spirit. He informed me that they keep the cover for all the soak tanks closed and the operating procedures are posted. Toluene is used as the cleaning solvent. The spent solvent is used in the adhesive making process.

Compliance Review:

EUBLDG41BOILER (125 HP (5.2 MMBTU/hr) Building 41 Boiler, Installed in 1954)

On July 18, 2023, EGLE-AQD issued a VN for the alleged violation of NESHAP 5D requirements related to EUBLDG41BOILER. On August 8th, AQD received email response to VN from the IPG. The response indicated IPG's admission of inadvertent failure in determining NESHAP 5D applicability for EUBLDG41BOILER, which caused the subsequent violations such as not submitting initial and semi-annual notifications to EPA, and not conducting one-time energy assessment. The response also indicated that IPG conducted routine tune up and provided the records of the tune ups and maintenance. IPG decided to permanently decommission the boiler and physically disconnect it from the natural gas fuel line by August 18, 2023. IPG offered to provide AQD with photos of the physically disconnected and blinded fuel line.

On August 18, 2023, IPG, via email, sent photographs of disconnected and capped off gas line to boiler and electric panel boxes locked. The email indicated that fuses are removed and decommissioned. AQD decided to resolve this violation based on these responses.

Title V Permit- MI-ROP-A6220-2021

SOURCEWIDE CONDITIONS:

This flexible group states that the conditions contained in this ROP for which a Consent Order is the only identified underlying applicable requirement shall be considered null and void upon the effective date of termination of the Consent Order. The effective date of termination is defined for the purposes of this condition as the date upon which the Termination Order is signed by the AQD Division Director.

IPG's AQD Consent Order No. 2020-14 is still in effect. Based on the reports submitted, the facility appears to be in compliance with the requirements of the consent order. We briefly discussed termination of the CO. I informed them that they may request to void the CO after 3 years since the effective date.

EUCOMPOUNDING:

The process emissions are controlled by two fabric filter baghouses. The facility has installed the pressure drop indicators and has been monitoring, and keeping records of the pressure drops across the baghouse as required by the ROP. The records

show the pressure drops are within the established ranges. IPG provided 2022 and 2023 pressure drop monitoring records. See discussion above under EUCOMPOUNDING. Based on the differential pressure readings, these dust collectors appear to be meeting the PM emission limit. IPG submitted a Preventive Maintenance Plan, dated July 2004, with latest revision date of June 9, 2017, for the dust collectors. The acceptable pressure drop range for each North and South dust collector is between 0.1 to less than 3.0 "WC. The readings are monitored continuously and manually recorded daily. The records show that the differential pressure readings are within the range. AQD has not requested PM testing for these dust collectors.

EU-PROCESSVESSELS:

MCM MACT, Table 1 requires IPG reduce emissions of toluene from process by 75% if the vapor pressure of the HAP is more than 0.6 kPa along with other options of compliance. IPG chose to comply with the >75% reduction by weight of the HAP by installing a condenser Mix Tank #6 and Churn Tank #6. The exhaust gas temperature is maintained at less than 85ºF. The mixer and churn tanks are covered with a lid except when operator access is necessary. A flow indicator is installed, and pressure is monitored to verify the presence of flow to the condensers. The portable process vessels (WHIP Tank) are equipped with cover/lid and is in place at all times when the vessel contain a HAP, except for material addition and sampling.

IPG submitted operating limits in the pre-compliance report dated September 1, 2020, Toluene Emission Reduction Compliance Demonstration dated October 5, 2020, and in the Notification of Compliance Status dated December 4, 2020.

IPG demonstrated compliance with the emission standards (percent reduction) using design evaluation. In Revised Compliance Demonstration Plan dated September 21, 2020, and in Toluene Emission Reduction Compliance Report (10/5/2020), IPG demonstrated the alternative approach to compliance testing, pursuant to 40 CFR 63.1282(d)(4)(i), and 40 CFR 63.1257(d)(3)(i)(B)(1) through 8, approved by EGLE-AQD and IPG.

IPG is keeping records of the monthly number of batches, quarterly actual emissions and quarterly estimated emissions. The facility submitted all the required reports.

Pursuant to 40 CFR 63.7985(c), the toluene USTs are not subject to MCM MACT if the predominant use is not associated with the MCM MACT affected source. IPG has determined that the predominant use of the toluene UST is associated with the POWC affected source. Based on the historical data (2015 to 2020), less than 5% of the toluene used at IPG was used in the production of coatings subject to MCM MACT.

EU-EQUIPMENTLEAKS

This is applicable to equipment that is in organic HAP service. IPG conducts monthly leak inspections of all equipment in organic HAP service. They are using sight and smell for leak detection. The reports indicate that when leaks are detected, they are repaired timely. IPG is keeping appropriate records for leak detection and repairs.

EU-WETMIXER

EU-WETMIXER is not yet in operation due to technical difficulties. Compliance verification was not conducted for this process. An initial startup notification was submitted in June 2016.

FGCOATINGPROCESS:

The web coating lines comprise the affected source that is subject to the Paper and Other Web Coating (POWC) Maximum Achievable Control Technology (MACT) Standard (40 CFR Part 63, Subpart JJJJ). The flexible group is an existing web coating affected source for the purposes of the POWC MACT standard.

The VOC emissions are limited to 4.79 pounds per gallon of solids applied based on a 24-hour averaging period. IPG submitted FG-COATINGLINES emission calculations for 2021, 2022 and up to May 2023. The emission calculations show that VOC emissions (lb VOC/gal solid applied) from FG-COATINGLINES comply with this emission limit. The calculations were submitted on a monthly basis. The highest emissions were 1.83 lb VO/gal solids applied for the month of April 2023.

The VOC emissions from EUPILOT-LINE are limited to 32.87 pounds per hour and 65.74 tons per year. The emission calculations (EUPilot-line VOC Report CY2022) for the pilot coater show that the VOC emissions are well below the emission limits. The Submitted records were for January through December 2022 and Jan-May 2023. Total VOC applied for this period was 569.95 pounds, VOC emitted was 41.43 pounds and HAP emitted was 5.02 pounds.

The POWC MACT provides several emission limit options for the facility to comply with. Facility chose the HAP limit of "no more than 20% of the mass of coating solids applied". The monthly calculations (Intertape Emissions Database-Daily Summary Sheet) show that the facility is in compliance with the emission limit. The highest recorded HAP emissions were 19.7% of the solids coated in April 2023.

In 2022 records show the following:

1. 84.773,110 square yards web coated,
2. 7,620,831 pounds of solids applied.
3. 17,537,920 pounds (2,251,527 gallons) of wet coating applied.
4. 10,576,256 pounds of VOC applied
5. 97.8% overall capture efficiency
6. 228,737 pounds of fugitive, uncontrolled emissions of VOC
7. 959,428 pounds of VOC ducted to RTO, which destroyed at 98.1% (941,190 pounds of VOC destroyed)
8. 18,229 pounds RTO stack emissions
9. 9,393,092 pounds VOC captured by SRS
10. 9,160,055, pounds of VOC (toluene) recovered by SRS for reuse
11. 480,004 pounds of VOC (toluene) emitted to outside ambient air.

2022 Deliveries:

DESCRIPTION	QTY
Toluène	28,740 gal.
Isopropyl Alcohol	1,432 gal.

For 2022, EUCOATINGLINE1/3/4 records for the Release Coat Annual Summary:

1. Release Coat Applied 260,429 gallons
2. Release Coat Applied 2,214,186 pounds
3. Release Coat Density 8.50 lb/gal
4. Release Coat VOC Applied 99,705 pounds
5. Release Coat VOC content 0.383 lb/gal
6. Release Coat VOC content 4.50% by wt.

Malfunction Abatement Plan for Solvent Recovery System (SRS) and Regenerative Thermal Oxidizer (RTO), revised September 2, 2020, was provided.

The % LEL of A-Unit Oven on EUCOATINGLINE1 and A-Unit Oven on EUCOATINGLINE4 are monitored continuously and are controlled by RTO when the %LEL is above 10%. The A-Unit Ovens in these coating lines are currently controlled by RTO all the time. The cure zone emissions from the EUCOATINGLINE1, EUCOATINGLINE3 and EUCOATINGLINE4 are controlled by the RTO. The facility keeps a minimum temperature of 1400°F in the combustion chamber of the RTO. The SRS and the RTO are installed in a satisfactory manner.

IPG conducted RTO capture efficiency for EUCOATINGLINE1, EUCOATINGLINE3 and EUCOATINGLINE4 and RTO destruction efficiency test during April 19 through April 28, 2022.Test Plan, dated February 17, 2022, was reviewed and approved by EGLE-AQD on April 11, 2022. Report Date =June 28, 2022

RTO VOC/HAP destruction efficiency was determined for three (3) one-hour test periods by simultaneously measuring the THC mass flowrate entering and existing the RTO. The average measured VOC/HAP destruction efficiency for the three test runs was 98.3% by weight (minimum required efficiency 95% by weight). RTO destruction efficiency test was done on April 22, 2022. The established three-hour average RTO combustion temperature was 1558°F. Minimum RTO combustion temperature = 1483°F. According to 40 CFR 63.3360(e)(3)(i), a three-hour average combustion temperature must be maintained at no more than 50°F lower than the 3-hour average combustion temperature observed during the compliance test (i.e. no lower than 1508°F).

VOC/HAP capture efficiency for each coating line was determined by simultaneously measuring the captured toluene mass flowrate to the SRS and RTO and comparing the amount of toluene captured during the test period to see the mass of toluene applied during the test period. At least three (3) two-hour (120 minute) test periods were performed for each coating line.

The test date for Line 3 did not result in three valid test runs. For Line 4, five valid test runs were performed to satisfy the DQO criteria. The report noted that these tests were not conducted in a 36-hour period. The tests were conducted on April 20 and April 27, 2022.

Coating Line 1: Test Date = April 21, 2022

SRS capture efficiency = 94.4% wt

RTO Capture efficiency = 3.4% wt

Average Overall Capture efficiency = 97.8% wt

Coating Line 3, Test Dates = 4/19/2022 (3 runs) and 4/28/2022 (3 runs)

SRS capture efficiency = 91.0% 103.9%; 106.2%; 107.0%, 108.2%; 109.4%

RTO capture efficiency = 5.4%; 5.0%; 5.5%, 4.3%, 5.0%, 4.2%

Average Overall Capture efficiency

= 96.4% 108.9% 111.6% 111.3% 113.2% 113.6%

The capture efficiency values exceed 105% and are excluded from the data set.

Coating Line 4: Test Dates = 4/20/2022 (3 runs) and 4/27/2022 (3 runs)

SRS capture efficiency = 95.6% RTO Capture efficiency = 5.4%

Average Overall Capture efficiency = 101.0%

VOC capture efficiency determined for EUCOATINGLINE1 and EUCOATINLINE4 are greater than and in compliance with the minimum required capture efficiency of 95%,

The results from the VOC capture efficiency evaluation for EUCOATINGLINE3 exceed 105%, which is considered invalid. IPG and ICT (test contractor) are reviewing the test results and assessing methods to be used to test EUCOATINGLILNE3 capture efficiency.

VOC/HAP destruction efficiency evaluation of the RTO for emissions from EUPILOT-LINE and its capture efficiency test was conducted during August 17-18, 2022. The tests were conducted per the approval (dated April 11, 2022) of the previous test plan. Report Date = October 10, 2022.

RTO VOC/VHAP destruction Efficiency = 97.1% (required destruction efficiency = >95%),

RTO Avg. Combustion Temp.= 1464ºF

EUPILOT-LINE VOC Capture Efficiency = 95.5%

The established three-hour average RTO combustion temperature was 1464ºF. Minimum RTO combustion temperature = 1414ºF. According to 40 CFR 63.3360(e)(3)(i), a three-hour average combustion temperature must be maintained at no more than 50ºF lower than the 3-hour average combustion temperature observed during the compliance test (i.e. no lower than 1414ºF). They provided RTO temperature records for May through July 2023. The records show that the facility is operating the RTO above this minimum temperature.

Capture efficiency test for EUCOATINGLINE3 was repeated on December 8, 2022. Report dated February 8, 2023, received via email (2/9/2023) and hardcopy on 2/13/2023. Report indicated that the results from two of the four test periods result in an overall capture efficiency that exceeds 105% by weight. Without three test periods

that are less than 105% and meet the test method data quality objective (DQO), the test is considered invalid.

Coating Line 3, Test Dates = 12/8/2022 (4 runs)

SRS capture efficiency = 95.0% 99.9%; 98.5%; 97.3.0%,

RTO capture efficiency = 6.9%; 8.1%; 8.2%, 6.8%,

Average Overall Capture efficiency= 101.9% 107.9% 106.6% 104.1%

Facility makes its own adhesives. VOC emissions are mostly HAP and Toluene is predominant HAP in the formulation. IPG doesn't perform USEPA Method 24 for VOC content, but they are using technical data sheet for the information. It is keeping records as necessary.

During the pre-inspection meeting, we discussed that they need to monitor and record the static pressures to verify continuous compliance with the capture efficiency.

On July 14, IPG sent two purity analysis results. 12/7/2020 report show that Toluene content was 99.56% along with Ethyl Benzene 0.07% and Xylenes 0.27%. January 4, 2023 report shows the following:

Cyclohexane = 0.21%

Benzene = 0.06%

Toluene = 98.45%

Ethyl benzene = 0.13%

Xylenes = 0.44%

On July 20, 2023, IPG explained that "the solvent sample is obtained from a fill valve in the WIP room. The sample is representative of solvent is in the USTs that is used make the adhesive. The USTs receive recovered solvent daily from the solvent recovery system and periodic new toluene deliveries The sample from December 2022 was taken 5-7 days after the 12/16/2022 solvent delivery, therefore, the solvent in the tank at the time the sample was pulled was primarily recovered solvent."

The purpose of the purity test is to determine the amount to toluene recovered versus toluene used in making the adhesive to calculate the recovery efficiency of the solvent recovery system. Therefore, collecting a representative sample from the toluene tank in the SRS recovery system, if safe and accessible, is preferred than getting a sample from the USTs.

Facility keeps separate records of the daily usage rate of all materials used in EUCOATINGLINE1, EUCOATINGLINE3 and EUCOATINGLINE4.

Facility calculates and records pounds of VOC per gallon of applied coating solids on each coating line, based on a 24-hour averaging period (Intertape Emissions Database-Daily Summary Sheet).

For EUPILOT-LINE, they informed me that they calculate and records the pound per hour VOC emission rates on a monthly basis and tons per year.

Facility calculates and keeps records of the cure zone emissions from the three coating lines. The emissions are reported monthly to AQD.

Facility continuously monitors and keeps records of the RTO combustion zone temperature. Based on POWC MACT, IPG is required to maintain a minimum average combustion temperature in any 3-hour period no more than 50 °F below the average combustion temperature limit established during most recent performance test according to 40 CFR 63.3360(e)(3)(i). The combustion temperature established during the April 2022 performance test was 1558ºF when controlling VOC emissions from coating lines 1, 3 and 4 and the combustion temperature established during the August 2022 performance test while operating EUPILOT-LINE was 1464ºF. With the latter test, IPG demonstrated that 95% destruction efficiency can be achieved at this lower temperature. Therefore, IPG is operating above minimum combustion temperature pursuant to 40 CFR 63.3360(e)(3)(i).

It also monitors the %LEL A-Unit Ovens, on a continuous basis. The coating lines are equipped with alarms which will sound if the %LEL of the exhaust gases vented to RTO from A-Unit oven exceeds 10%. Facility maintains RTO and SRS as required by the ROP and implements the requirements of the Malfunction Abatement Plan.

Facility keeps daily records of the solvent usage in the three coating lines and calculates the pounds of VOC per gallon of solids applied on each coating line, based on a 24-hour averaging period. The calculated results show compliance with the permit limit (4.79 lb/gallon coating solids). The facility calculates the SRS recovery efficiency as required.

The combustion temperature is the operating parameter to monitor for the continuous compliance of the RTO. The facility calculates 3-hour averages of the operating temperature. May through July 2023, records review shows that the facility operated the RTO mostly above 1500ºF while the coating lines are operating. According to 40 CFR 63.3360(e)(3)(i), the three-hour average combustion temperature must be maintained no more than 50ºF lower than the 3-hour average combustion temperature observed during the compliance test (i.e. no lower than 1414ºF). The 3-hour average combustion chamber temperature were above the minimum temperature of 1414ºF. The facility is keeping records of the thermocouple calibrations, malfunctions, if any and repairs. The facility appears to be in compliance with the requirements of Special Conditions 13 and 16.

Facility's coating lines have never-controlled and always-controlled workstations. The workstations are "always controlled" while solvent based coatings are used, but "never-controlled" while water based coatings are used. The workstations for release coat are not controlled. It has identified "static pressure" of the capture system as the operating parameter to be monitored to ensure the capture efficiency. It is monitoring the static pressure on a continuous basis and calibrates (valve monitoring) on a monthly basis.

Facility is keeping records of the malfunctions, maintenances, actions, etc. as required. It submits this information with semi-annual certification report and startup, shutdown and malfunction report.

The facility keeps records of CMS measurements, audits, calibrations, and malfunctions. The facility also keeps records of all reports, notifications and each applicability determination. The facility is not using a continuous emission monitoring system (CEMS) to verify SRS efficiency. The facility maintains records for the control device and capture system operating parameters, keeps formulation data to calculate VOC and HAP content, capture and control efficiencies, material usage, organic HAP usage, volatile matter usage, and coating solids usage, etc.

The facility has installed two meters in series to measure the accumulative solvent flow from the SRS system. Facility is keeping records of the liquid-liquid material balances performed in accordance with 40 CFR 63.3370.

IPG is keeping computerized preventive maintenance (MAINTIMIZER) program for work schedules.

The facility has not been keeping a manual checklist of all monitoring and preventive maintenance items. They agreed to keep the checklist for the future.

The facility is keeping records of VOC solvents purchased, VOC solvents in stock, amount of adhesive in stock, and amount of toluene-based adhesive, IPA based adhesive and water-based adhesive. IPG purchased about 28,740 gallons of Toluene and 1,432 gallons of IPA in 2022.

The facility is keeping records pounds of VOC per gallon of coating, and daily hours of operation of each coating line.

Facility has submitted initial notification, performance testing notification, performance test report, initial compliance status, semi-annual compliance reports, start up, shut down, malfunction reports, as required.

Facility has submitted a written Start up, Shut down and Malfunction Abatement Plan for the source, control and monitoring system in May 1999.

Facility keeps a written Startup, Shutdown, Malfunction Plan and Continuous Monitoring System quality control program in file.

Facility uses the add-on controls option to show compliance with the emission limits. During the performance test, the capture efficiency and control efficiency were calculated. It calculates the emission limit on a monthly basis, as required.

The daily calculations show 80.5% to 100% collection efficiency for the SRS, tests show 97.8 to 100% capture efficiency for SRS and RTO combined and RTO control efficiency of 95.5% (pilot line) and 97.1% for the coating lines 1, 3 and 4. The calculations show that the organic HAP emissions are less than 0.20 kg/kg coating solids. The highest value was 0.197 kg/kg coating solids applied in April 2023.

The facility has demonstrated initial compliance for each capture system and the RTO through performance tests and demonstrates continuing compliance through continuous monitoring of capture system and control system operating parameters as required. The performance tests are required to be conducted every five years.

Facility demonstrates compliance with the emission limit using two control devices. The SRS uses material balance to demonstrate compliance and the web coating lines have always controlled and never controlled workstations. Facility uses the Equation 1 in Appendix 10 of the ROP to show compliance with the HAP emission limits.

FGBOILERMACT

EU-SRSBOILER is subject to 40 CFR 63, Subpart DDDDD-NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. This boiler was installed in 2019 and the compliance date is upon start up. This flexible group includes requirements for a new boiler that is designed to burn gas 1 subcategory fuel with a heat input capacity of 10 MMBTU/hr or greater at major sources of HAP emissions per 40 CFR Part 63, Subpart DDDDD (Boiler MACT). Units designed to burn gas 1 subcategory fuels include boilers or process heaters that burn only natural gas, refinery gas, and/or Other Gas 1 fuels. Units that burn liquid fuel for testing or maintenance purposes for less than a total of 48 hours per year, or that burn liquid fuel during periods of curtailment or supply interruptions are included in this definition. EU-SRSBOILER is not equipped with Oxygen Trim Systems.

The requirements include an annual tune up within 13 months of the previous tune up.

IPG submitted initial notification of start up on May 19, 2019. Initial Start up was on April 29, 2019. Facility submitted maintenance records. Annual Tune up was completed on August 2, 2022. Submitted Annual Compliance Report dated January 27, 2023.

FG-BOILERNSPS

EU-SRSBOILER is subject to New Source Performance Standards specified in 40 CFR, Part 60, Subparts A and Dc-Standards of performance for Small Industrial-Commercial-Institutional Steam Generating Units. This flexible group includes requirements for NSPS Subpart Dc. The requirements include burning of pipeline quality natural gas in the boiler and keeping records of monthly gas usage. IPG provided records of monthly gas usage. The gas usage for 2022 was 88.65 MMCF.

FG-EMERGJJJJ

FG-EMERG-JJJJ consists of emergency, stationary, spark ignition (SI) internal combustion engines (ICE) with a maximum engine power greater than 19 KW (25 HP) that commence construction on and after January 1, 2009, which are subject to 40 CFR Part 60, Subpart JJJJ-The Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

EU-GENERATOR is a natural gas fired, KOHLER Model 100REZGD, rated at 158 HP (100 KW) emergency engine/generator. It was installed in 2018. Kohler certification shows that the engine meets the emission limits for NOx, CO, and VOC. IPG also submitted "Certificate of Conformity with the Clean Air Act" issue date July 19, 2017, for the 2018 model year engines (Engine Family: JPSIB5.70EMT). EU-GENERATOR is equipped with a three way catalyst to reduce NOx, CO and VOC emissions.

IPG provided maintenance log for 2022 and 2023 and 2022 contractor maintenance report (August 8, 2022). EU-GENERATOR is an EPA certified engine and appears to

be operated and maintained according to the manufacturer's emission related written instructions. I did not inspect EU-GENERATOR during my inspection.

IPG provided following information:

Hour meter beginning of 2022 = 98.9 hours

Hour meter beginning of 2023 = 128.5 hours

Total hours CY 2022 = 29.6 run hours

EU-GENERATOR complies with 40 CFR Part 63, Subpart ZZZZ-National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (for new or emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions) by meeting the requirements of 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for EU-GENERATOR under NESHAP ZZZZ pursuant to 40 CFR 63.6590(c).

FG-MACTHHHHH

Each new and existing miscellaneous coating manufacturing operation as defined in 40 CFR Part 63, Subpart HHHHH, 63.7985(b) that meet the conditions specified in 40 CFR 63.7985(a)(1) through (4). This includes the facility-wide collection of equipment described in 40 CFR 63.7985(b)(1) through (4) used to manufacture coatings as defined in 40 CFR 63.8105 and also includes cleaning operations.

Provisions of the Miscellaneous Coating Manufacturing MACT are applicable only when the coating manufacturing operations produce adhesive that is not used in affiliated operations at an affected source under the POWC MACT. This flexible group includes EU-WETMIX&WHIP-OP, EU-PROCESSVESSELS, EU-EQUIPMENTLEAKS.

IPG informed me that all adhesives, subject to MCM MACT, coming from Churn #6 go directly into DOT travel totes and remain in DOT totes until they reach their final destination. A small batch of adhesive in a self-contained mixer may be located in the WHIP room if the viscosity of the adhesive is too high. In this scenario the small batch mixer in the WIP room is used. This mixer in the WIP room is only used for DOT totes and at no time in the process does the adhesive transferred outside of the DOT travel totes.

The organic emissions from the mixer and churn are reduced by venting emissions through a closed-vent system to a control system (condensers). IPG calculated that the inlet emissions to the condensers are more than 1 ton per year. IPG has established operating limits and measured and recorded, as required.

In the July-Dec 2022, semi-annual report, IPG reported 4 Deviations- Mixer #6 condenser exhaust temp exceedance; Mixer #6 -Final Nitrogen dryout step not properly executed; Mixer #6 and Churn #6 operating temperature exceedance; Mixer #6 and Churn #6 operating temperature monitored, but not recorded. The report indicated that these deviations were corrected. Therefore, EGLE-AQD did not send a violation notice (VN). If similar deviations occur in the future, VN may be issued.

IPG conducted design evaluation to show comply with the emission standards. Pre-compliance Report, Notification of Compliance Status were submitted.

IPG is conducting the closed-vent system leak inspections and submitted reports. The leaks are repaired timely.

Regarding whether the coating manufacturing subject to MCM MACT should be considered new or existing, IPG responded that the applicability section of 40 CFR Part 63 Subpart HHHHH (miscellaneous coating manufacturing MACT) defines a new affected source as (§63.7990) *An affected source is a new affected source if you commenced construction or reconstruction after April 4, 2002, and you met the applicability criteria at the time you commenced construction or reconstruction.* The applicability notification submitted by IPG in 2019 for Subpart HHHHH indicates that the manufacture of adhesives for off-site shipment began in 2015. Therefore, that specific process became subject to the MCM MACT requirements in 2015 when it began manufacturing coatings that were shipped off-site and were no longer exempted from the MCM MACT under affiliated operations. However, the equipment (the source) itself remained physically unchanged except for adding additional condenser emission controls per the MCM MACT. The criteria for 'new affected source' specify that construction or reconstruction would have to occur after the new source applicability date. The process equipment has not been constructed or reconstructed since that date; therefore, it has been correctly categorized as an existing source. In other words, becoming subject to the emission control requirement after the new affected source date does not constitute commencing construction or reconstruction, which is central to the applicability for 'new affected source'. The definitions of construction and reconstruction (§63.2) rely only on physical changes to the equipment.

FGRULE290

The R&D Pilot Line (EURDPILOT-LINE) is the only process at IPG currently installed and operated under Rule 290. This line is also referred as the "COE" (Center of Excellence). This unit is used only for R&D purposes.

The compounding and coating process utilized in building 48. There are no solvents used in this process – the adhesive produced is 100% solids. A polymeric isocyanate (MDI) is added to the adhesive, but this particular MDI has a very low vapor pressure, and it remains with the adhesive when coated. The levels of MDI that are present at the coating head are in the 2 – 6 ppb levels, as measured by a third party. There are essentially no emissions generated by this process.

EURDPILOT-LINE primarily uses solvent-less adhesives that either contain methylene diphenyl diisocyanate (MDI) or UV-curable adhesives. Air pollutant emission rates are very small for these materials. The table below provides a list of air toxics that Intertape tracks for this process along with the corresponding screening levels.

Name	CAS	ITSL ug/m3	
zinc oxide	1314-13-2	20	8-hr
heavy naptha distillate	64742-52-5	50	8-hr
dewaxed heavy paraffin mineral oil	64742-65-0	50	8-hr
styrene-butadiene polymer	9003-55-8	0.1	annual
MD isocyanate	101-68-8	0.6	annual
polymeric isocyanate	9016-87-9	0.6	annual
talc	14807-96-6	0.8	annual (IRSL)

FG-COATINGBOOTHS

EU-R&DPAINTBOOTH is only emission unit in this flexible group. This booth is only used occasionally. IPG is keeping records of the usage. The filters appear to be in place and not damaged or heavily soiled. I did not collect any records. The facility appears to be in compliance with the usage and emission limit requirements.

FG-COLDCLEANERS:

The facility has five soak tanks. I did not inspect all the cold cleaners. I observed couple of them while passing by. They were not being used at that time. Those cold cleaners I saw were kept covered. IPG mostly use Toluene as the cleaning solvent. These are not heated. These cold cleaners appear to be in compliance with the requirements.

Intertape does NOT use the MACT T listed halogenated HAP solvents (>5%w: ethylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3)) in the cold-cleaners.

On Wednesday, June 28, 2023, I accompanied US EPA Region 5 staff Veronica Fischer, Natalie Schulz, and Erin DuMontelle, for their inspection at IPG. They discussed facility operations and requested a few records. EGLE-AQD received IPG inspection report from EPA Staff on August 22, 2023, and is filed.

Conclusion:

Based on the information provided, records review and on-site inspection, IPG appears to be in compliance with applicable air quality regulations.

NAME Sebastian Kallenkal DATE 08/29/2023 SUPERVISOR Joyce