

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

N174966196

<b>FACILITY:</b> PLASTATECH ENGINEERING LTD		<b>SRN / ID:</b> N1749
<b>LOCATION:</b> 725 MORLEY DR, SAGINAW		<b>DISTRICT:</b> Bay City
<b>CITY:</b> SAGINAW		<b>COUNTY:</b> SAGINAW
<b>CONTACT:</b> Michael Matthews , Environmental		<b>ACTIVITY DATE:</b> 01/25/2023
<b>STAFF:</b> Gina McCann	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> Inspection of PTI 336-97C		
<b>RESOLVED COMPLAINTS:</b>		

I (glm) conducted a scheduled inspection to determine compliance with PTI 336-97C and air regulations. I met with Mr. Michael Matthews, Corporate Safety Director, Jim Huff, Maintenance Supervisor, Justin Evans, Bob Wood, and Kaitlyn Szekely. The inspection included a tour of the production facility, air pollution control equipment, and a review of electronic records for processes and emission control devices. A violation notice was sent for non-compliance of recordkeeping requirements for EU-EXTRUDER and FGLAMINATORLNS.

Plastatech Engineering has 150 employees that utilize four (4) shifts. They manufacture vinyl and PVC film material. The material is predominantly used in the roofing industry but has expanded to use as geomembrane liners at landfills. These films are produced in a calendaring process and undergo additional steps to produce the finished products, primarily commercial roofing membranes. On December 16, 2014, the facility was issued PTI 336-97C which is a facility wide opt-out permit for hazardous air pollutants (HAPs). This permit covers a calendar line (EUCALENDERLN), two laminator lines (FGLAMINATORLNS) and an extruder line (EUEXTRUDERLN). FGLAMINATORLNS is controlled by Smog-Hogs, similar to ESPs, for volatile organic compounds (VOC)/condensable PM emissions and EUEXTRUDERLN is controlled by a cyclone and cartridge-type dust collector system.

#### EU-CALENDERLN: Compliant

The calendar process extrudes a measured amount of thermoplastic PVC material between successive pairs of co-rotating, parallel rolls, to form a PVC film 3 to 40 mills in thickness. The process consists of three 90,000 pound storage tanks (two for plasticizer and one for ESO), three 1500 pound totes, three 170,000 pound PVC resin silos, four 2,200 pound super sacks a five story mixing tower, a planetary extruder, a strainer extruder, a 14 foot conveyor, calendar rolls, and cooling rolls. The calendar line is an extrusion process that produces the initial product used for all finished goods at the facility. Raw materials consisting of PVC resin, plasticizers, heat stabilizers, biocides and colors are combined by gravity loading into a weigh hopper and loaded into the planetary extruder followed by a screw extruder. The extruders are heated by a hot oil bath jacket on the extruders. This process generates a semi-viscous thermoplastic that is pressed into a thin film using a series of high temperature, high pressure rollers. This film is then cooled by an additional series of rollers, trimmed to width and wound into rolls. These rolls then go to other operations or are shipped off-site.

Emissions generated in the calendar process are captured by hoods and vented outside through one stack. VOC emissions are limited to 16.3 ton per year (TPY) for this line. I reviewed records from January 2017 through December 2022. VOC emissions ranged from 6.86 ton per year (tpy) in February 2021 to 9.25 tpy in February 2020.

**EU-EXTRUDER: Non-Compliant**

This emission unit is a vinyl film extruder process to produce reinforced vinyl film up to 12 feet in width. The extruders will mix the raw materials to make a vinyl fluid, calender the filmsheets in one process. The dry raw material handling will be controlled by a cyclone and cartridge-type dust collector system. This unit was installed in 2014 and triggered the PTI revision for 336-97C.

The facility is required to maintain a malfunction abatement plan (MAP) for the pollution control equipment. A copy was received via email on December 16, 2016. The proper pressure drop operating range shall be included in the MAP. The current MAP did not include the pressure drop range. The facility sent a revised MAP including the pressure range is acceptable between 1-5 psi. Additionally, the permit requires the facility to monitor and keep records of the pressure drop across the cartridge-type dust collector system on a weekly basis. The facility was not able to produce these records.

The extruder was not in operation during the inspection. Several staff were cleaning the screws that are used to auger the material.

The extruder is restricted to 6,000 hours of operation per 12-month rolling time period determined at the end of each month. I reviewed hours of operation between January 2017 and December 2022. The facility is trending upward in hours of operation with December 2022 at 3,878 hours.

The facility is required to comply with VOC emission limits of 66.2 tpy. I reviewed records from January 2017 through December 2022. VOC emissions ranged from 8.5 tpy in March 2018 to 29.4 tpy in December 2022. PTI 336-97C limits the use of plasticizer, epoxidized soybean oil (ESO) and heat stabilizer to 16,000,000 pounds (lbs)/yr, 1,000,000 lbs/yr, and 1,125,000 lbs/yr, respectively, based on a 12-month rolling time period as determined at the end of each calendar month. I reviewed records from January 2017 through December 2022. The facility was below the limits for each of these materials.

**FG-LAMINATORLNS (EULAMINATORLN1, EULAMINATORLN2): Non-compliant**

Plastatech operates two laminator lines for producing a roofing membrane. The lamination process thermally bonds two vinyl films to a reinforcing mesh (scrim) to produce the roofing membrane. A plasticizer is used as the laminating adhesive that bonds the two vinyl films to the scrim substrate. Each line is controlled by a Smog-Hog electrostatic precipitator (ESP) at the facility. The lamination process involves bonding two layers of the vinyl film over a reinforcing mesh (scrim) using a plasticizer as an adhesive and heat to activate. Each laminator line utilizes a separate Smog Hog ESP to control emissions from the process, (No. 2 for line 1 and No. 3 for line 2). The emissions are generated from the curing of the adhesive and captured by hoods over the heated portion of the process.

The Smog-Hogs utilize a closed loop chilled water system for temperature control in the units. The PTI requires continuous monitoring of the temperature of the SmogHog exhaust and limits the temperature to less than 130°F. Each process has an individual data logger for the continuous monitoring of the exhaust temperatures. The ESPs are interlocked with the processes such that production cannot begin, or continue, without the ESPs operating at the correct chiller temperature and exhaust gas temperature. Processes will automatically shut down if the ESPs

begin operating out of range. At the time of the inspection, Smog Hog #1 was operating at 98.62° F and unit #2 was at 117.4°F. The permit requires the facility to maintain continuous record of the temperature in each Smog-Hog. The facility was unable to produce temperature records from 2020 to current.

FGLAMINATORS is limited to no more than 3.8 tpy VOCs per 12 month rolling time period. VOC emissions are based on the yardage of each item. I reviewed usage records from January 2017 through December 2022. VOC emissions ranged from 0.86 tpy in January 2017 to 1.46 tpy in December 2018. The 12-month rolling time period ending December 2002 reported VOC emissions at 0.90 tpy.

Each line in FGLAMINATORS is restricted to less than 7,000 hours per line, per 12-month rolling time period determined at the end of each calendar month. I reviewed records from January 2017 through December 2022. Each line operated below 500 hours based off of the 12-month rolling time period determined at the end of the calendar month.

#### FG-FACILITY: In Compliance

FG-Facility establishes minor HAP limits for the facility. This group consists of all equipment at the stationary source including equipment covered by other permits, grandfathered equipment and exempt equipment. This group establishes the opt-out limits for HAPs to keep this facility out of Title V at 9.0 tpy for each individual HAP and 22.5 tpy for the aggregate of HAPs. Two HAPs are listed at this facility, 2-(2- butoxyethoxy) ethanol and Phenol. I reviewed records from January 2017 through current. The individual emissions ranged from 7.4 tpy in December 2022 for 2-(2-butoxyethoxy) and 2.4 tpy in December 2022 for Phenol. Aggregated HAP emissions for the 12-month rolling time period ending December 2022 were 9.8 tpy.

NAME

DATE 2/3/2023

SUPERVISOR

