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

N314558274

FACILITY: FLORACRAFT CORPORATION		**SRN / ID:** N3145
LOCATION: ONE LONGFELLOW PLACE, LUDINGTON		**DISTRICT:** Cadillac
CITY: LUDINGTON		**COUNTY:** MASON
CONTACT: James Morkert , EH&S Manager		**ACTIVITY DATE:** 05/06/2021
STAFF: Caryn Owens	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Onsite Inspection and Records Review		
RESOLVED COMPLAINTS:		

On Thursday, May 6, 2021 Caryn Owens of the Department of Environment, Great Lakes, and Energy (EGLE) – Air Quality Division (AQD) conducted an On-site field inspection of Floracraft Corporation (Floracraft) (SRN: N3145) located at One Longfellow Place in Ludington, Mason County, Michigan. The entrance is located approximately 1/3 mile west of the North Washington Road and East Longellow Street intersection.

The field inspection and records review were to determine compliance with the permit to install (PTI) 245-09B. Floracraft has opted out of major source applicability by limiting operational and/or production limits potential to emit (PTE) to be below major source thresholds for Hazardous Air Pollutants (HAPs).

Summary:

The activities covered during the field inspection and records review for the facility indicates the facility was in compliance with PTI 245-09B. Specific permit conditions that were reviewed are discussed below.

On-site Inspection:

Floracraft is a polystyrene foam extrusion/production facility. The facility currently consists two tandem extrusion systems, each with primary and secondary extruders to prime and extrude polystyrene foam (EU-EXTRUSIONLINE1 and EU-EXTRUSIONLINE2). Extrusion Line 1 produces polystyrene rods, and Extrusion Line 2 produces polystyrene rectangular billets and rods. Gases, such as pentane, butane, and difluoroethane are used as blowing agents in the extrusion process. EU-EXTRUSIONLINE1 is in the main central building. EU-EXTRUSIONLINE2 is located in the eastern-most building as well as the central dust collector that collects dust from the shavings and grinding operations (EUDUSTCOLLECT2), which also is equipped with a cyclone prior to entering the baghouse that vents to atmosphere. There is also a new packaging warehouse that the company purchased July 2020. This warehouse building is located on the south side of East Longfellow Street, and was formerly Straits Steel & Wire. This is where the foam it cut to specific sizes, packaged, and stored for shipments. The packaging process has been automated. All the cutters in the new building contain filters with fume hoods and vent to atmosphere. The filters in the fume hoods are changed on a regular basis.

During the field inspection it was overcast and light rain with winds approximately 0 to 5 miles per hour out of the west-southwest, and approximately 45 degrees Fahrenheit. I met with James Morkert the EH&S Manager of Floracraft, and then we met with Phil Gable, the Director of Extrusion and we were escorted through the facility. Upon arrival, Mr. Morkert had me complete a COVID-19 screening test prior walking through the facility.

During the inspection both extrusion lines and dust collector are operating. The Styrofoam arrives in large clear bags of little beads that are fed into an extruder under pressure and heat, then it is injected with the gas which causes it to expand into the extruded shape, and once cooled the product is cut and moved to specific areas of the facility where it is cut or formed to the required shapes and sizes. We began the inspection on the eastern-most building, which contained EU-EXTRUSIONLINE2 and EUDUSTCOLLECT2. The pulse jet baghouse (EUDUSTCOLLECT2) was at a 0.6 psi. According to Mr. Morkert, the bags in the baghouse were recently changed (within the last 6 months), so they are still pretty clean, and the pressure is not quite to the ideal pressure yet. EU-EXTRUSIONLINE1 was operating and making rods during the inspection. The blowing agents used in EU-EXTRUSIONLINE1 during the inspection are butane and pentane. Butane was injected at 28.48 pounds per hour (pph) and pentane was injected at 7.4 pph. The blowing agent gases are stored outside in large bullet above ground storage tanks, on the northern portion of the property. The Styrofoam pellets are stored in silos that are fed to the extruder systems by an automatic pneumatic system.

Records Review:

EU-EXTRUSIONLINE1: This emission unit includes a Tandem extrusion system with primary and secondary extruders and a die to manufacture extruded polystyrene foam. The primary extruder is 4-inch diameter, and the secondary extruder is 5-inch diameter. Ethyl chloride, pentane, butane, and difluoroethane are the blowing agents. A collection hood and exhaust system are located above the extruder.

I. Emission Limits:

The emission limits for EU-EXTRUSIONLINE1 are 18.6 tons of volatile organic compounds (VOCs) per year based on a 12-month rolling time period, and 15.3 ton of Difluoroethane (HFC-152a) per year based on a 12-month rolling time period. Based on the records reviewed from January 1, 2020 through April 30, 2021, the highest VOC emissions reported were 5.7 tons per 12-month rolling time period, and the highest HFC -152a emissions reported were 3.7 tons per 12-month rolling time period. The facility is in compliance with the permitted emission limits for EU-EXTRUSIONLINE1.

II. Material Limits:

Material Limits are not applicable for EU-EXTRUSIONLINE1.

III. Process/Operational Restrictions:

Process/Operational Restrictions are not applicable for EU-EXTRUSIONLINE1.

IV. Design/Equipment Parameters:

During the inspection, collection hoods and an exhaust system were installed, operated and maintained in a satisfactory manner. The filters on the collection hoods are changed out on a regular basis. According to Mr. Morkert, the employees have specific maintenance projects on a list that needs to be completed during their shifts.

V. Testing/Sampling:

Testing/Sampling requirements are not applicable for EU-EXTRUSIONLINE1.

VI. Monitoring/Recordkeeping:

The facility records the number of hours ran on EU-EXTRUSIONLINE1, and keeps track of the amount of blowing agent used, and uses emission factors to determine emissions from EU-EXTRUSIONLINE2. Records of the pounds of each blowing agent used and the mass emission calculations are kept on a monthly basis. The facility is in compliance with the permitted Monitoring/Recordkeeping requirements for EU-EXTRUSIONLINE1.

VII. Reporting:

Reporting requirements are not applicable for EU-EXTRUSIONLINE1.

VIII. Stack/Vent Restrictions:

Stack/Vent Restrictions EU-EXTRUSIONLINE1 have not changed from the previous inspection and appear to be accurate.

IX. Other Requirements:

Other Requirements are not applicable for EU-EXTRUSIONLINE1.

EU-EXTRUSIONLINE2: This emission unit includes a Tandem extrusion system with primary and secondary extruders and a die to manufacture extruded polystyrene foam. Pentane (with small percentage of ethyl chloride), butane, and difluoroethane

are the blowing agents. A collection hood and exhaust system is located above the extruder.

I. Emission Limits:

The emission limits for EU-EXTRUSIONLINE2 are 68.3 tons of volatile organic compounds (VOCs) per year based on a 12-month rolling time period, and 55.8 ton of Difluoroethane (HFC-152a) per year based on a 12-month rolling time period. Based on the records reviewed from January 1, 2020 through April 30, 2021, the highest VOC emissions reported were 27.0 tons per 12-month rolling time period, and the highest HFC-152a emissions reported were 29.7 tons per 12-month rolling time period. The facility is in compliance with the permitted emission limits for EU-EXTRUSIONLINE2.

II. Material Limits:

Material Limits are not applicable for EU-EXTRUSIONLINE2.

III. Process/Operational Restrictions:

Process/Operational Restrictions are not applicable for EU-EXTRUSIONLINE2.

IV. Design/Equipment Parameters:

Design/Equipment Parameters are not applicable for EU-EXTRUSIONLINE2.

V. Testing/Sampling:

Performance Testing was completed July 10, 2014 to verify VOC and HFC-152a emission rates/ Based on the testing Testing/Sampling requirements are not applicable for EU-EXTRUSIONLINE2.

VI. Monitoring/Recordkeeping:

The facility records the number of hours ran on EU-EXTRUSIONLINE2, and keeps track of the amount of blowing agent used, and uses emission factors to determine emissions from EU-EXTRUSIONLINE2. Records of the pounds of each blowing agent used and the mass emission calculations are kept on a monthly basis. The facility is in compliance with the permitted Monitoring/Recordkeeping requirements for EU-EXTRUSIONLINE2.

VII. Reporting:

Reporting requirements are not applicable for EU-EXTRUSIONLINE2.

VIII. Stack/Vent Restrictions:

Stack/Vent Restrictions EU-EXTRUSIONLINE2 have not changed from the previous inspection and appear to be accurate.

IX. Other Requirements:

Other Requirements are not applicable for EU-EXTRUSIONLINE2.

EUDUSTCOLLECT2: This emission unit includes a dust collection system that collects dust from the foam billets' manufacturing operations and a recycle grinder. The system consists of a cyclone with a fabric filter baghouse.

I. Emission Limits:

The emission limits for EUDUSTCOLLECT2 are limited to 0.01 pounds of particulate matter (PM) per 1000 pounds of exhaust gases; 0.54 pph of PM10 and PM2.5. The method to show compliance with these emission limits is through monitoring the pressure drop across the equipment which is further discussed below.

II. Material Limits:

Material Limits are not applicable for EUDUSTCOLLECT2.

III. Process/Operational Restrictions:

The facility submitted a Malfunction Abatement Plan (MAP), which was approved by AQD January 13, 2014. According to the MAP, an alarm will go off if the differential pressure is less than 1 inch water ("wc). During the inspection, the differential pressure was at
0.6 "wc, and the alarm was a flashing light indicating the differential pressure was below
1 "wc. According to Mr. Morkert, all the bags were replaced in November 2020 for EUDUSTCOLLECT2, and have not received the proper buildup yet to be at the proper differential pressure range. They did follow the MAP when the flashing light occurred, and the differential has been increasing, it's just not over the 1 "wc mark yet. Looking at the stack during the inspection, no visible emissions were present. EUDUSTCOLLECT2 appeared to operating properly.

IV. Design/Equipment Parameters:

During the inspection, I observed the cyclone, which appeared to installed, operated and maintained in a satisfactory manner.

V. Testing/Sampling:

Testing/Sampling requirements are not applicable for EUDUSTCOLLECT2.

VI. Monitoring/Recordkeeping:

As previously stated, EUDUSTCOLLECT2 has a magnehelic gauge that monitors the differential pressure in the baghouse and contains an alarm when the pressure drop is below 1 "wc.

VII. Reporting:

Reporting requirements are not applicable for EUDUSTCOLLECT2.

VIII. Stack/Vent Restrictions:

Stack/Vent Restrictions EUDUSTCOLLECT2have not changed from the previous inspection and appear to be accurate.

IX. Other Requirements:

Other Requirements are not applicable for EUDUSTCOLLECT2.

FGFACILITY: Includes all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

I. Emission Limits:

The Emission Limits for FGFACILITY are individual hazardous air pollutant (HAP) emissions shall be below 9.0 tons per year based on a 12-month rolling time period and total HAPs shall be below 22.5 tons per year based on a 12-month rolling time period. The only HAP used at the facility is ethyl chloride, (ETCL) which the facility has phased out and no longer uses. The records from January 1, 2020 through April 30, 2021, show that ETCL is no longer used.

II. Material Limits:

Material Limits are applicable to FGFACILITY conditions of the stationary source.

III. Process/Operational Restrictions:

No Process/Operational Restrictions are applicable to FGFACILITY conditions of the stationary source.

IV. Design/Equipment Parameters:

No Design/Equipment Parameters are applicable to FGFACILITY conditions of the stationary source.

V. Testing/Sampling:

Since the facility no longer uses ethyl chloride, Testing/Sampling is not applicable.

VI. Monitoring/Recordkeeping:

Since the facility no longer uses ethyl chloride, Monitoring/Recordkeeping requirements are not applicable. .

VII. Reporting:

No Reporting requirements are applicable to FGFACILITY conditions of the stationary source.

VIII. Stack/Vent Restrictions:

No Stack parameters are applicable to FGFACILITY conditions of the stationary source.

IX. Other Requirements:

No Other Requirements are applicable to FGFACILITY conditions of the stationary source.

NAME Cayn Owens DATE _____ SUPERVISOR Shane Nixon 2021.07.22 14:35:51 -04'00'