

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

N191626900

FACILITY: Comfort Research		SRN / ID: N1916
LOCATION: 1719 Elizabeth NW, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Joel Burkel, Operations Ninja		ACTIVITY DATE: 08/25/2014
STAFF: Denise Plafcan	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

AQD staff Denise Plafcan (DP), and Jenifer Dixon (JD) conducted an unannounced scheduled inspection of Comfort Research (CR) to determine compliance with State and Federal air quality rules, regulations, ROP No. MI-ROP-N1916-2014 and Consent Order AQD No. 4-2013. DP requested to speak to Chris Brinks, he was not in, then Rob Crow, he is no longer with the company, then Matt Jung, the owner, who was in a meeting. After 40 minutes, Joel Burkel, Operations Ninja, introduced himself as the contact since Chris was not in. DP and JD provided a copy of the Environmental Inspection Brochure and briefly explained what was involved with the inspection. Joel has only been in his new position for a couple of months and with the company for about 18 months.

CR has approximately 45 employees operating one 8 hour shift five days per week manufacturing bean bag style chairs using recycled foam and virgin expanded polystyrene beads (EPS) as the filler. The pre-expanded bead is about one half the width and length of a grain of white rice. The expanded bead is about the size of a pea. The EPS bead expansion process consists of a Hirsch expander, with a capacity of approximately 1,500 pounds of beads per hour, which is used for both the first and second stage expansion. The 29 curing nets are used to hold the beads for curing after each stage of expansion. The 2 stump grinders used to grind scrap foam into small chunks have been replaced with a large room size (approximately 10 feet X 10 feet by 10 feet) agricultural grinder that is in a loading dock area of the plant and the foam goes to a fill area inside the plant. The foam products go to a wrapping area that removes the air from the foam chunk products before shipping. The foam grinding operation is exempt from Rule 201 permitting requirements by Rule 285(l)(vi)(B) because it only exhausts into the in-plant environment. It was included in the PTI process because it was part of the initial installation which was subject to Rule 278 and therefore the exemption could not be used. However, there aren't any additional conditions in the ROP for the shredding operation. Two 6.3 MM Btu/hour natural gas boilers are used to supply steam the other boilers have been decommissioned. The EPS beads go through 2 expansion cycles on the Hirsch expander and are allowed to air dry in one of the 29 large curing nets. All other expanders have been removed or decommissioned. The first pass through the expander contains about 200 lbs of beads and are expanded with 3 lbs of steam. The second pass the tank holds about 65 pounds of beads and uses 5 lbs of steam. There is a blow drier chamber that runs between 110°F and 120°F to dry the beads before they are moved into the tents. The beads shrink after drying so the two step expansion helps to achieve full expansion of the bead permanently. The expanded bead is then used to fill the chairs or fabric bags that will become the chair or plastic bags that are sold at retail locations to refill chairs. The filling takes place at one of 6 filling stations. One of the employees has devised a method of automating the fill process and they are looking at having only the automated fill lines and removing the manual fill lines.

Joel was the escort on the inspection. The first stop was the new research and development room. Models or molds are made out of Styrofoam by cutting and shaping. DP explained the significance of contacting the AQD to discuss any equipment changes that they might be considering as they may require a PTI modification. In this case, the research area would be exempt from PTI requirements under a Rule 283(1)(a)(v) exemption. However, an exemption may not always be applicable for a particular change at the plant and could result in a violation. The next area was the Hirsch expander. Joel explained the filter that had placed inside the stack to collect small fines that were being expanded and blown out the stack. This system was designed by one of the employees (Doug Hoff) and is a bag inside the stack inside the building that filters the extremely fine particulate. The bag is emptied based on the pounds of beads or number of totes processed roughly every couple of weeks. Doug Hoff is the main operator of the Hirsch and took some time out to explain the operation, installation of the bag system, and on site records. DP verified with Andy Drury, AQD Permit Engineer, whether the installation of the bag would be considered an obstruction from vertically upward. Andy said based on the

description that it would not be considered an obstruction.

At the closing meeting, DP and JD emphasized the environmental impact of the facility even though it may be a relatively small production operation. Joel was not aware of the ROP, the reporting requirements, the consent order or resulting fines placed on the company. DP also requested that Chris call AQD when he returns to set up a meeting to review the records that are making up the cells on the spreadsheets that are submitted.

#### **SOURCE-WIDE CONDITIONS**

##### **VII. REPORTING**

1. Reporting of deviations and Semiannual and Annual compliance certification are being submitted as required.

##### **IX. OTHER REQUIREMENT(S)**

1. At a minimum, the permittee shall comply with paragraphs 9, 11A, 11B, 11C, 12, 13, 14, 15, 16, and 17 of Consent Order AQD No. 4-2013 entered on June 6, 2013 (Consent Order AQD No. 4-2013) the company is complying with the Consent Order.

#### **FGBEADEXPAND**

**Emission Units:** EUHIRSCH, EUCURING

#### **POLLUTION CONTROL EQUIPMENT**

1. FGBEADEXPAND VOC 165.75 tons 12-month rolling time period as determined at the end of each calendar month. 72.86 tons of VOC based on July 2014 records submitted on August 15, 2014

##### **II. MATERIAL LIMIT(S)**

1. EPS bead VOC content 6.5 pounds per 100 pounds of EPS beads processed is being used for all calculations based on worst-case scenario.

2. EPS bead 36,000 pounds of beads<sup>1</sup> per calendar day First stage bead expander. Highest day was 14,400 pounds on July 24, 2014 based on July 2014 records submitted on August 15, 2014.

3. EPS bead 5.1 million pounds of beads 12-month rolling time period as determined at the end of each calendar month first stage bead expander. Highest month was November 2013 at 4,149,600 based on July 2014 records submitted on August 15, 2014.

##### **VI. MONITORING/RECORDKEEPING**

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. Records are being maintained as required, see attached.

2. The permittee shall keep, in a satisfactory manner, records of the pounds per calendar day throughput of EPS beads through the FGBEADEXPAND first stage expansion on file at the facility and make them available to the Department upon request. Records are being maintained as required, see attached.

3. The permittee shall keep, in a satisfactory manner, records of the monthly and 12-month rolling time period pounds of throughput of EPS beads through the FGBEADEXPAND first stage expansion on file at the facility and make them available to the Department upon request. Records are being maintained as required, see attached.

4. The permittee shall keep, in a satisfactory manner, a separate record of the pounds of VOC per 100 pounds of EPS beads, for each shipment of EPS beads received at the facility, on file at the facility and make them available to the Department upon request. Records are being maintained as required, see attached.

5. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period records of the VOC emission rate from FGBEADEXPAND, using a method acceptable to the AQD District Supervisor, on file at the facility and make them available to the Department upon request. Records are being maintained as required, see attached. Chris did call when he returned to the office and DP will visit the site to confirm that all the data cells on the spreadsheet are being calculated properly.

**VII. REPORTING**

1-3. Reporting of deviations and Semiannual and Annual compliance certification are being submitted as required.

4. Records are being submitted for each calendar month in which the data was collected and recorded, and being submitted as required within 30 days following the end of the calendar month, see attached.

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted: The following stack dimensions were not verified during this compliance inspection due to the condition of the roof.

SV-HIRSCH1 Maximum Exhaust Dimensions 24 inches Minimum Height Above Ground 27 feet

SV-HIRSCH2 Maximum Exhaust Dimensions 24 inches Minimum Height Above Ground 27 feet

SV-HIRSCHSTEAM Maximum Exhaust Dimensions 6 inches Minimum Height Above Ground 27 feet

Based on the physical inspection and the records review, CR appears to be in compliance with State and Federal air quality rules, regulations, ROP No. MI-ROP-N1916-2014 and Consent Order .

NAME *Aerise Drafen*

DATE 9-17-14

SUPERVISOR PAB

