

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

A002345343

<b>FACILITY:</b> OTSEGO PAPER INC		<b>SRN / ID:</b> A0023
<b>LOCATION:</b> 320 N Farmer St., OTSEGO		<b>DISTRICT:</b> Kalamazoo
<b>CITY:</b> OTSEGO		<b>COUNTY:</b> ALLEGAN
<b>CONTACT:</b> Frank Knowles , Environmental Compliance		<b>ACTIVITY DATE:</b> 07/11/2018
<b>STAFF:</b> Cody Yazzie	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Scheduled Inspection		
<b>RESOLVED COMPLAINTS:</b>		

On July 11, 2018 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 320 North Farmer Street, Otsego, Michigan at 10:00 AM to conduct an unannounced air quality inspection of USG Otsego Paper (hereafter Otsego Paper). Staff made initial contact with the office receptionist and provided him with a business card and stated the purpose of the visit. Frank Knowles, Otsego Paper, Environmental Compliance Supervisor, arrived shortly thereafter and took staff to his office for further discussions.

Otsego Paper manufactures the paper that is applied to the back of gypsum board. The facility has one paper machine that uses 100 percent recycled paper and corrugated materials. The paper machine has three fourdriniers and is capable of producing a triple ply sheet. Otsego Paper also supplies its own power. The power is produced from two turbines and HRSG trains that are capable of producing both power and steam. The package boiler produces steam only and is intended to be used in a backup role to the turbines.

Otsego Paper was last inspected by the AQD on January 5, 2016 and was determined to be in Compliance at that time with MI-ROP-A0023-2013. Staff asked, and Mr. Knowles stated that the facility does not have any emergency generators or boilers that were not included in the permit. He also stated that the facility does have one tool cleaner in the maintenance area.

Mr. Knowles gave staff a tour of the facility. Required personal protective equipment are steel toe boots, safety glasses, hearing protection, and a high visibility vest. Staff observations and review of records provided during and following the inspection are summarized below:

#### **SOURCE WIDE:**

The facility has source wide HAP's limit for both individual HAP's and combined HAP's. The limits are 9.0 tons per year for each individual HAP, and 22.5 tons per year for all combined HAP's. The facility is tracking around 33 different HAP's. Hexane is the most produced HAP in the facility. The average 12-month rolling for the past 1.5 years was around 1.37 tons per year. The average combined 12-month rolling HAP emissions were 1.44 tons per year.

#### **EUPAPERMACHINE1**

This is a triple Fourdrinier former machine that produces a three-ply sheet. The top ply uses clean white recycled magazine stock and both the middle and bottom plies use other recycled paper or corrugated boxboard. Separate pulping, cleaning, and refining equipment are used to prepare the two types of furnish.

Nalco has a representative on-site at Otsego Paper that tracks and monitors the types of material used, usage rates, hours of operation and VOC emission calculations. Staff was provided SDS for the materials used in the process. The facility calculates VOC emissions by using the VOC content, density, and volumetric usage rates. Otsego Paper has two VOC limits that the facility is tracking. The facility averages around 185 lbs/day, and the largest 24-hour average occurred in November of 2016 at 195.5 lbs/day. The average 12-month rolling VOC emissions was 29.5 tons per year over the past two years. The largest 12-month rolling VOC emissions occurred during November 2016 at 30.4 tons per year. These are all well below the EUPAPERMACHINE1 emission limits.

#### **FGCOGEN:**

This flexible group includes both turbines, duct burners, and the package boiler. This flexible group has a total heat input capacity limit of 567.3 MMBTU/hour as measured on HHV basis. The facility complies with this limit by operating the package boiler as a backup to the turbine for steam production. Duct burners are operated only

when the additional steam is needed for the turbines. Typically, only one duct burner is needed to produce the additional steam need.

Otsego Paper is not keeping an accurate 12-month rolling average for their emission limits. The facility is calculating the monthly emissions then projecting those emissions over a 12-month span. Staff explained in an email to Mr. Knowles how a correct 12-month rolling average is calculated and expects to see the change reflected in their emission reports. From staff's calculations the 12-month rolling emission for NO<sub>x</sub>, CO, and VOC from data provided averaged 108 tons per year, 1.3 tons per year, and 1.0 tons per year respectively. These are well below the permit limits.

#### **EUTURBINE 1 & 2:**

These are two identical natural gas Solar Mars 100-15000S turbines with a maximum heat capacity of 141.5 MMBTU/hour as measured on a Higher Heating Value (HHV) basis. The facility refers to EUTURBINE1 as the North turbine and the EUTURBINE2 as the South Turbine. These turbines were installed on January 11, 1995. These turbines have identical special conditions within the ROP. These turbines are also subject to 40 CFR 60, Subpart GG.

These turbines are only fueled by pipeline quality natural gas. The facility does have a sulfur content limit that shall not exceed 0.8% by weight. Otsego Paper had documentation from the natural gas provider that the sulfur content was 3.3 ppm on April 12, 2018. This equates to 0.00033% sulfur content. Otsego Paper was also keeping records of the previous reported sulfur content provided by the natural gas provider.

Again, Otsego Paper is not keeping an accurate 12-month rolling average for their emission limits. Staff expects to see the change reflected in their emission reports. From staff's calculations the 12-month rolling emission for NO<sub>x</sub>, CO, and VOC from data provided averaged 28.5 tons per year, 0.35 tons per year, and 0.00 tons per year respectively for EUTURBINE1. EUTURBINE2's 12-month rolling emissions averaged 22.5 tons per year, 0.7 tons per year, and 0.0 tons per year respectively. These are well below the permit limits.

Both units are equipped with a NO<sub>x</sub> CEMs. These are to comply with the requirements of the CAIR Ozone NO<sub>x</sub> Budget Permit. The CEMs are calibrated, monitored, and recorded during the months of May through September. Otsego paper can discontinue the monitoring October through April.

The CAIR program no longer exist and has been replaced by the Cross-State Air Pollution Rule (CSPAR) program. Facilities are subject to the CSPAR program if they are combustion turbine in operation since January 1, 2005, serving a generator with a nameplate capacity of more than 25 megawatts (MW) producing electricity for sale. The nameplate capacity of the generator was checked during the inspection for each turbine. Both turbine's generators were rated at 10 MW. The facility also only produces electricity for its own use. The new ROP should reflect that it is not subject to the CSPAR program. The facility will still be required to monitor with the CEMs unit during the Ozone season.

Both turbines have recently undergone an overhaul. During routine maintenance that was being performed on the North Turbine Otsego Paper was told that the turbine was close to catastrophic failure. This prompted Otsego Paper to initially apply for a permit to install. After discussions with the MDEQ Otsego Paper decided to just overhaul the turbine under exemption Rule 285(2)(c)(iii). The MDEQ did ask for a 278(a) demonstration which was received on April 2, 2018. After receiving the 278(a) letter and further discussions with Otsego Paper MDEQ staff stated that ultimately operating under an exemption is left up to the company and they need to be able to prove that what they are doing qualifies for an exemption. District staff and Chris Ethridge did agree that USG Otsego Paper could move forward with the overhaul based on the evidence provided. A more detailed summary can be found in the telephone notes in MACES on March 26, 2018.

#### **EUDUCTBURNER 1 & 2:**

These are two identical natural gas fired duct burners associated with the Heat Recovery Steam Generator (HRSG), coupled to turbines 1 and 2. These duct burners have a maximum heat input of 152.4 MMBTU/hour measured on an HHV basis. These turbines are also subject to 40 CFR 60, Subpart Db.

Both units are equipped with a NO<sub>x</sub> CEMs. These are the same CEMs used to monitor the turbines. These are to comply with the requirements of the CAIR Ozone NO<sub>x</sub> Budget Permit. The CEMs are calibrated, monitored, and recorded during the months of May through September. Otsego paper can discontinue the monitoring October through April.

When the facility is not operating the CEMS unit during non-Ozone Season. The NO<sub>x</sub> emission factor is derived from the worst-case 24-hour average emission rate measured by the NO<sub>x</sub> CEM during the previous Ozone

season. While the facility is in Ozone season the facility is using the average emission factor that the CEMS unit monitored and recorded. A stack test in 2014 was performed to derive emission factors for CO and VOC. The emission factors for CO and VOC are 0.00487 lbs/MMBTU and 0.00006 lbs/MMBTU respectively for EUDUCTBURNER1 and 0.007 lbs/MMBTU and 0.00000 lbs/MMBTU respectively for EUDUCTBURNER2.

Otsego Paper has a contract with Wunderlich that produces reports that calculate the worst-case 24-hour average emission rate measured by the CEMs. The facility is using this to show compliance with the 0.2 lb/MMBTU limit on the duct burners. Otsego Paper's worst 24-hour average during 2016 was 0.163 lb/MMBTU and 0.127 lb/MMBTU during 2017 for EUTURBINE1 while, the worst 24-hour average during 2016 was 0.117 lb/MMBTU and 0.130 lb/MMBTU during 2017 for EUTURBINE2. All are below the permit limit.

Again, Otsego Paper is not keeping an accurate 12-month rolling average for their emission limits. Staff expects to see the change reflected in their emission reports. From staff's calculations the 12-month rolling emission for NOx, CO, and VOC from data provided averaged 0.5 tons per year, 0.2 tons per year, and 0.00 tons per year respectively for EUDUCTBURNER1. EUDUCTBURNER2's 12-month rolling emissions averaged 2.4 tons per year, 0.20 tons per year, and 0.00 tons per year respectively. These are well below the permit limits.

#### **EUPACKAGEBOILER:**

This is a natural gas and No. 2 oil fired package boiler used for back-up purposes. The facility currently doesn't have the ability to operate the boiler on the No. 2 oil. The piping that supplies the fuel oil has been removed. The package boiler is also subject to the 40 CFR 60, Subpart Db.

Otsego Paper is monitoring and recording the natural gas consumption in the boiler on an hourly basis. They are also required to keep records of the annual capacity factor when burning natural gas and No. 2 fuel oil. Staff received the 1<sup>st</sup> quarters of the annual capacity factor and they were in compliance. The facility also tracks this on the COGENERATION PLANT MONTHLY AIR EMISSIONS RECORDS.

A stack test was performed on July 15, 2014 for the NOx, CO, and VOC that measured emissions in lbs/hour. These emission rates were used to produce emission factors for NOx, CO, and VOC. The emission factors that resulted from the stack test are 0.12 lbs/MMBTU, 0.001 lbs/MMBTU, and 0.0004 lbs/MMBTU respectively.

Again, Otsego Paper is not keeping an accurate 12-month rolling average for their emission limits. Staff expects to see the change reflected in their emission reports. From staff's calculations the 12-month rolling emission for NOx, CO, and VOC from data provided averaged 1.35 tons per year, 0.00 tons per year, and 0.00 tons per year respectively. These are well below the permit limits.

#### **EUFIREPUMPEAST:**

This is an emergency fire pump with 305 HP diesel engine. This engine was installed in 2007. This engine is subject to 40 CFR 60, Subpart IIII. The engine is equipped with a non-resettable hour meter that read 117.0 hours during the inspection. The facility is keeping track of the hours that the engine is used and what it was used for. Most of the hours are being used for readiness testing. Annual maintenance is being performed. It was last done June 2018. Otsego Paper was able to provide documentation that engine is certified to the emission standards to 40 CFR 60, Subpart IIII.

#### **FGRICEMACT:**

This flexible group consist of two Reciprocating Internal Combustion Engines (RICE). These engines are subject to 40 CFR 63, Subpart ZZZZ. EUFRIEPUMPWEST is a 290 HP diesel emergency fire pump that was installed in 2001. EUBLACKSTART is a 433 HP diesel generator installed November 1, 1995. EUBLACKSTART is used to supply electricity that powers the hydraulic starters for both turbines.

There is a non-resettable hour meter on each engine. EUFIREPUMPWEST recently had a new non-resettable hour meter installed on it. The old hour malfunctioned a few months before the inspection. Otsego Paper kept track of the old hour meter reading which was 251.1 hours. The new hour meter read 2.8 during the inspection for a total of 253.9 hours on the engine. EUBLACKSTART's engine hour meter read 109.8 during the inspection. The facility is recording the hours that the engine is used and for what reason.

The facility also has annual maintenance preformed on these engines. The annual maintenance included changing of the oil and inspection of the air cleaner, hoses, and belts.

#### **FGRULE290:**

This facility does not have any current emission units operating under this flexible group.

**RULE291**

EUTANKVENT1 and EUTANKVENT2 are relief vents installed on two tanks associated with the pulping process. EUTANKVENT1 is installed on the Refined Filler Storage Chest on November 1, 2016, while the EUTANKVENT2 is installed on the Filler Blend Chest on October 1, 2017. The capacity of the two tanks are 59,840 gallons and 17,800 gallons respectively. These tanks mix acids and recycled paper to generate pulp for the paper machine. The mixture of the acid and recycled paper produces hydrogen gas and hydrogen sulfide gas.

Otsego Paper installed the vents to avoid creating a dangerous operating condition. Emission factors for this process were derived from monitoring the headspace concentrations of the vent and, the maximum concentration from the monitoring was used to produce the emission factors. The potential emissions for EUTANKVENT1 are calculated to be 2.93 tons per year of hydrogen gas and 1.5 tons per year of hydrogen sulfide gas. These limits comply with the Rule 291 limits.

**TOOL CLEANER:**

Staff was told that there was one cold cleaner located in the maintenance area of the facility. Staff asked to see this unit during the inspection. Safety Kleen maintains this unit for the facility. After reviewing the SDS sheet provided by Otsego Paper the solution used is a water-based detergent. This would exclude the unit from meeting the definition of a cold cleaner because it does not use an organic solvent and not subject to 707 Rules.

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in compliance with MI-ROP-A0023-2013. Staff stated to Mr. Knowles that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 1:00 PM.-CJY

NAME Cody Yappi

DATE 7/30/18

SUPERVISOR MR 7/30/2018