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

A002362560

FACILITY: OTSEGO PAPER INC		**SRN / ID:** A0023
LOCATION: 320 N Farmer St., OTSEGO		**DISTRICT:** Kalamazoo
CITY: OTSEGO		**COUNTY:** ALLEGAN
CONTACT: Frank Knowles , Environmental Compliance		**ACTIVITY DATE:** 12/10/2021
STAFF: Cody Yazzie	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On-site inspection		
RESOLVED COMPLAINTS:		

On December 10, 2021 Air Quality Division (AQD) staff (Cody Yazzie) arrived at 320 North Farmer Street Michigan at 10:00 AM to conduct an unannounced air quality inspection of Otsego Paper Inc (hereafter Otsego Paper) SRN (A0023). Staff made initial contact with the environmental contact and stated the purpose of the visit. Frank Knowles, Otsego Paper, Environmental Compliance, is the environmental contact and 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 12/18/2019 and appeared to be in compliance at that time with MI-ROP-A0023-2019 Staff asked, and Mr. Knowles stated that the facility does not have any emergency generators, or boilers not listed in the ROP.

Mr. Knowles gave staff a tour of the facility. Required personal protective equipment are steel toe boots, a high visibility vest, safety glasses, and hearing protection. 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. Formaldehyde is the most produced HAP in the facility. The largest 12-month rolling Aggregate HAP emissions were 1.759 TPY which is well below both the individual and aggregate limit.

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. Since January 2020 the facility averages around 284 lbs/day, and the highest pounds per day emissions based on a monthly average occurred in October of 2021 at 364.4 lbs/day. The average 12-month rolling VOC emissions was 45.2 tons per year since January 2020. The largest 12-month rolling VOC emissions occurred during November 2021 at 51.3 tons per year. These are all well below the EUPAPERMACHINE1 emission limits.

FGCOGEN:

This flexible group includes both turbines and duct burners. The package boiler has been removed as it was decommissioned and taken out of the recent ROP modification. This flexible group has a total heat input capacity limit of 576.2 MMBTU/hour as measured on HHV basis. The facility complies with this limit by operating the duct burners 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 has provided recordkeeping of calculated 12-month rolling emissions. Since January 2020 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 156.29 TPY, 6.42 tons per year, and 1.21 tons per year respectively for FGCOGEN. These are well below the permitted 217.8 TPY of NOx, 215.20 TPY of CO, and 23.2 TPY of VOC emissions allowed for FGCOGEN.

The facility is maintaining record of all start up and shutdown events. The record shows the amount of hours that the events last. In addition, the facility is maintaining a record of the amount of hours when the external temperature is 0 degrees Fahrenheit. The facility has a temperature monitor in the control station for the turbines.

EUTURBINE 1:

EUTURBINE has not been modified since the previous inspection, so the conditions have stayed the same. EUTURBINE2 has been modified, which is reflected in the modified ROP which has changed some conditions associated with EUTURBINE2. EUTURBINE1 is subject to NSPS Subpart GG.

EUTURBINE1 is 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 of tested natural gas sampling that the sulfur content was 6 ppm on September 10, 2020. This equates to 0.0006% sulfur content. The This is below the required limit for the facility.

During the inspection the facility was operating EUTURBINE1. EUTURBINE1 was operating and using natural gas at a rate of 116 MSCFH and producing 49.49 KPPH of steam.

During June 2019 the facility completed the requirement of MI-ROP-A0023-2019a that requires the facility to verify the CO and VOC emission rates from EUTURBINE1 and EUTURBINE2 at a minimum every five years from the date of the last test.

For EUTURBINE1 emissions are calculated using data from June 2019 stack test results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0006 lbs/MMBTU.

For EUTURBINE1 and EUTURBINE2 emissions that were calculated from June 2019 until the time of the inspection the facility uses the June 2019 stack results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0006 lbs/MMBTU respectively for EUTURBINE1 and 0.001 lbs/MMBTU and 0.0007 lbs/MMBTU respectively for EUTURBINE2.

Otsego Paper has provided recordkeeping to include accurately calculated 12-month rolling emissions. Since January 2020 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 36.36 TPY, 0.50 tons per year, and 0.3 tons per year respectively for EUTURBINE1. These are well below the permitted 87.7 TPY of NOx, 74.2 TPY of CO, and 1.3 TPY of VOC emissions allowed for EUTURBINE1.

EUTURBINE1 is equipped with a NOx CEMs. These are to comply with the requirements of the CAIR Ozone NOx 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.

EUTURBINE2:

Since the previous inspection the facility had applied for a PTI modification that allowed EUTURBINE2 to have software adjusted and allowed to operate at a higher maximum heat capacity. The physical unit of EUTURBINE2 is the same the software has just been upgraded. The maximum heat capacity of EUTURBINE1 remained the same of 141.5 MMBTU/hour. EUTURBINE2 has a new maximum heat input capacity of 150.8 MMBTU/hour. EUTURBINE2 is subject to NSPS Subpart KKKK along with having additional conditions as a part of FGNSPSKKKK.

EUTURBINE2 is 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 of tested natural gas sampling that the sulfur content was 6 ppm on September 10, 2020. This equates to 0.0006% sulfur content. The This is below the required limit for the facility.

During the inspection the facility was operating EUTURBINE2. EUTURBINE2 was operating and using natural gas at a rate of 124 MSCFH and producing 65 KPPH of steam along with EUDUCTBURNER2.

During June 2019 the facility completed the requirement of MI-ROP-A0023-2019a that requires the facility to verify the CO and VOC emission rates from EUTURBINE1 and EUTURBINE2 at a minimum every five years from the date of the last test. With the PTI mod the facility had plans to conduct required stack testing in March 2022.

For EUTURBINE2 emissions are calculated using data from June 2019 stack test results. The emission factors for CO and VOC from this stack test are 0.001 lbs/MMBTU and 0.0007 lbs/MMBTU.

Otsego Paper has provided recordkeeping to include accurately calculated 12-month rolling emissions. Since January 2020 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 19.89 TPY, 0.58 tons per year, and 0.4 tons per year respectively for EUTURBINE2. These are well below the permitted 55 TPY of NOx, 57 TPY of CO, and 3.4 TPY of VOC emissions allowed for EUTURBINE2.

EUTURBINE2 is equipped with a NOx CEMs. These are to comply with the requirements of the CAIR Ozone NOx 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 facility has indicated that it plans to conduct initial testing and preform the subsequent testing rather than have the CEMS be operated year-round. Staff indicated that the facility should follow testing requirements as apart of NSPS KKKK for subsequent testing which vary based on stack test results. Testing could either be every 14 calendar months or 26 calendar months based on results.

FGNSPSKKKK:

This flexible group includes EUTURBINE2 and EUDUCTBURNER2 which are a natural gas fired combustion turbine with a natural gas-fired duct burner. These emission unit are subject to the NSPS Subpart KKKK regulation. As discussed in the EUTURBINE2 section the facility plans to test the initial performance testing of the turbine in March 2022. The facility does have a CEMS unit that monitors NOx emissions. During the inspection the facility indicated that it would likely preform the subsequent testing required so that the CEMS unit does not have to operate outside of Ozone season. The facility is maintaining a record of the fuel composition analysis provided by the gas provider. As stated in previously in FGCOGEN the facility is maintaining record of all start up and shutdown events. The record shows the amount of hours that the events last. In addition, the facility is maintaining a record of the amount of hours when the external temperature is 0 degrees Fahrenheit. The facility has a temperature monitor in the control station for the turbines.

The facility is keeping monthly natural gas usage and run hours records on a monthly basis. In addition, the facility provided documentation that the is determining the heating value of the natural gas in BTU per cubic foot on a monthly basis.

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. EUDUCTBURNER1 is subject to 40 CFR 60, Subpart Db. EUDUCTBURNER2 is subject to 40 CFR 60, Subpart KKKK. In addition, EUDUCTBURNER2 is associated with FGNSPSKKKK.

Both units are equipped with a NOx CEMs. These are the same CEMs used to monitor the turbines. These are to comply with the requirements of the CAIR Ozone NOx 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 NOx emission factor is derived from the worst-case 24-hour average emission rate measured by the NOx 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.

During July 2019 the facility completed the requirement of MI-ROP-A0023-2019 that requires the facility to verify the CO and VOC emission rates from EUDUCTBURNER1 and EUDUCTBURNER2 at a minimum every five years from the date of the last test. The emission factors for CO and VOC from this stack test are 0.093 lbs/MMBTU and 0.0026 lbs/MMBTU respectively for EUDUCTBURNER1 and 0.082 lbs/MMBTU and 0.0051 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 30-day rolling time period 0.2 lb/MMBTU limit on the duct burners. Records show and average and a worst 24-hour average that the data was analyzed. During 2020 Ostego Paper's worst 24-hour average was 0.144 lb/MMBTU and 0.119 lb/MMBTU for EUDUCTBURNER1 and EUDUCTBURNER2 respectively. The worst 24-hour average during 2021 was 0.093 lb/MMBTU and 0.068 lb/MMBTU for EUDUCTBURNER1 and EUDUCTBURNER2 respectively. These are well below the permitted limit.

Otsego Paper is keeping record of calculated 12-month rolling emissions for NOx, CO, and VOC. Since January 2020 the largest 12-month rolling emission for NOx, CO, and VOC were calculated to be 1.60 TPY, 2.9 tons per year, and 0.1 tons per year respectively for EUDUCTBURNER1. The largest calculated 12-month rolling emissions for NOx, CO, and VOC since January 2020 were 3.9 TPY, 8.2 TPY, and 0.5 TPY respectively for EUDUCTBURNER2. These are well below the permitted 115.1 TPY of NOx, 37.3 TPY of CO, and 9.6 TPY of VOC emissions allowed for EUDUCTBURNER1 and EUDUCTBUNER2.

EUWAREHOUSEHTRS:

This emission unit is for two natural gas-fired heaters that were installed for a storage warehouse that was recently built when EUTURBINE2 was modified. Only conditions for these are that the heaters are only fueled by natural gas and both heaters do not exceed a heat input capacity of 18.14 MMBTU/hr.

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 154.5 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. During the last inspection it was noted that Otsego Paper was able to provide documentation that engine is certified to the emission standards to 40 CFR 60, Subpart IIII. A copy of the certification document can be found with the 2018 inspection report in the facility's correspondence file. The facility was able to provide the most recent work history order for EUFIREPUMPEAST. The last annual maintenance was performed on 2/25/2021 in which oil was replaced, the unit was inspected, the engine was fired up and tested. Otsego Paper is maintaining records of when the units are operating and for what reason.

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. During the last inspection it was noted that the non-resettable hour meter on EUFIREPUMPWEST had recently been replaced. The previous inspection also mentioned that Otsego Paper kept track of the old hour meter reading which was noted as 251.1 hours. The hour meter reading during the inspection was noted as 36.8 hours. This bring the total engine hours to 287.9 hours. EUBLACKSTART's engine hour meter read 241.4 during the inspection. The facility is recording the hours that the engine is used and for what reason. Otsego Paper is maintaining records of when the units are operating 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. The facility was able to provide the most recent work history order for EUFIREPUMPWEST and EUBLACKSTART. The last annual maintenance was performed on 2/25/2021 in which oil was replaced, the unit was inspected, the engine was fired up and tested.

FGRULE290:

This facility does not have any current emission units operating under this flexible group. This flexible group table could possibly be taken out of the next ROP renewal if the facility does not have a Rule 290 emission unit at the time of the renewal.

RULE291:

EUTANKVENT1 and EUTANKVENT2 are relief vents installed on two takes 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.

This Emission unit should be added into the ROP during the next renewal cycle if the units are still in operation.

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. The product that is being used in the tool cleaner is identified as ARMAKLEEN 4 in 1 Cleaner – Cleaning Solution. It was reported that the solution gets diluted to 5% for use. The SDS provided shows that this dilution has a VOC content of 1.02% by weight. The Part One rule definition for "cold cleaner" under R336.1103(aa) is a tank containing organic solvent with a volatile organic compound content of 5% or more, by weight. Since the ARMAKLEEN 4 in 1 Cleaner product does not meet this definition the tool cleaner is not currently subject to the Part 7 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-A0023-2019a. 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 11:30 AM.-CJY

NAME Cody Yaeger DATE 4/22/2022 SUPERVISOR RIL 4/26/22