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144 First Street
Menominee, MI 49858

Mr. Joseph Scanlan
Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division (AQD)
Marquette District Office
1504 West Washington Street
Marquette, MI 49855

June 1, 2021

**Re: Response to Violation Notice dated May 21, 2021
Dunn Paper - Menominee (SRN: B1855)**

Dear Mr. Scanlan:

Dunn Paper - Menominee (Dunn Paper) is submitting this letter promptly in response to Michigan Department of Environment, Great Lakes, and Energy (EGLE) Violation Notice (VN) dated May 21, 2021. In the VN, EGLE alleges that EUBOILER#1 emitted opacity in excess of visible emissions (VEs) allowed by Michigan Air Pollution Control Rule 301 (R 336.1301(1)), as stated in General Condition 11 of Renewable Operating Permit (ROP) No. MI-ROP-B1855-2016a. EGLE performed a Method 9 VE test at the unit on May 19, 2021 and observed VEs exceeding a 6-minute average per hour of 27% opacity and VEs exceeding a 6-minute average of 20%.

R 336.1301(1) states:

(1) Except as provided in subrules (2), (3), and (4) of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:

(a) A 6-minute average of 20% opacity, except for 1 6-minute average per hour of not more than 27% opacity.

(b) A limit specified by an applicable federal new source performance standard.

(c) A limit specified as a condition of a permit to install or permit to operate.

Alleged Violation and Corrective Actions

EGLE's May 19, 2021 Method 9 VE readings, enclosed with the VN letter, indicate that, over the course of the 1-hour VE test, there were nine (9) observed 6-minute averages that exceeded 20% opacity. All EGLE readings, with the exception of one (1) 6-minute average, were less than 27% opacity. Therefore, the alleged violation occurred for approximately 48 minutes.

Prior to this event, Dunn Paper had notified EGLE during an unrelated inspection on May 10, 2021 and follow-up e-mail on May 11, 2021 regarding the recent replacement of a regulator on the natural gas feed



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line to EUBOILER#1 that was suspected to be causing occasional opacity from the stack, which typically cleared after a minute or less. The correspondence also indicated that Dunn Paper would be installing an oxygen sensor with oxygen trim control during the upcoming boiler inspection outage at EUBOILER#1, and that the boiler controls would be re-tuned. EUBOILER#1 is a natural gas-fired boiler with a steam capacity of 70,000 pounds per hour (lbs/hr) that provides steam for paper product drying and facility heating.

The following paragraphs outline the regulator replacement, correspondence with EGLE, and corrective actions taken.

Wisconsin Public Service (WPS) owns and operates two (2) natural gas regulators (one serves as back-up) located outside of Dunn Paper's property that supply natural gas to EUBOILER#1. On April 13, 2021, WPS replaced the back-up natural gas regulator as part of routine maintenance schedule. Dunn Paper's paper machine and EUBOILER#1 were shut down and changes were not made to EUBOILER#1 while WPS replaced the regulator.

Following replacement of the back-up regulator and subsequent startup of EUBOILER#1, Dunn Paper immediately noticed changes to the burn efficiency of EUBOILER#1. The natural gas pressure at EUBOILER#1 had changed by approximately one (1) pound per square inch (psi), although WPS indicated that the pressure at the regulator had not changed following the replacement. Dunn Paper contacted McCotter Energy, our boiler maintenance company, the same day to conduct an emergency re-tuning on EUBOILER#1 combustion controls. On the afternoon of April 13, 2021, McCotter Energy conducted a boiler tune-up and made adjustments to the burn curve at each point on EUBOILER#1, suggesting that the regulator replacement had likely impacted natural gas inlet flowrate to the unit. Dunn Paper has been in contact with WPS for a better understanding of whether the replaced regulator would have affected the unit's burn efficiency and consequently elevated opacity. As of the date of this letter, WPS continues to state that no changes were made to the natural gas system pressure even though we observed a 1.0-psi increase at our boiler.

On May 10, 2021, Mr. Joseph Scanlan of EGLE visited our site to conduct an inspection of EUBOILER#3 to ensure that the unit had been dismantled in support of our recent request to void the ROP. During his site visit, we discussed that opacity was occasionally occurring from the EUBOILER#1 stack following replacement of the associated natural gas regulator. Mr. Scanlan indicated that the opacity appeared to be moderate and not likely to be an issue. Nonetheless, Dunn Paper scheduled an additional tune-up of EUBOILER#1 for June 1, 2021. Dunn Paper also followed up in an e-mail to EGLE on May 11, 2021 outlining our action plan to install an oxygen sensor and oxygen trim control system.

Prior to the subsequent tune-up, Mr. Michael Conklin of EGLE arrived at Dunn Paper on May 19, 2021 to perform the Method 9 VE test at the EUBOILER#1 stack. Upon receipt of the VN letter on Friday, May 21, 2021 alleging that opacity levels were in excess of VE standards, Dunn Paper brought McCotter



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Energy onsite the following Monday, May 24, 2021, for additional tuning of EUBOILER#1. Since the additional tuning, Dunn Paper has been closely monitoring opacity and has not noted unusual levels of opacity since May 24, 2021. Attached are photos taken for the next 3 days after the tuning on May 24th.

As previously discussed, Dunn Paper will also be installing an oxygen analyzer to provide oxygen trim capability ("automated" tuning) and avoid rich-burn situations. Installation of the oxygen analyzer is scheduled to occur during our July 2021 outage and will not increase the maximum fuel flow or heat input of EUBOILER#1. Installation of the oxygen analyzer will allow EUBOILER#1 to maintain the air-to-fuel-ratio near the minimum required (i.e., stoichiometric ratio) and improve combustion (i.e., reaching complete combustion of natural gas). Although multiple tune-ups have proven to be effective to this point, Dunn Paper expects that the installation of an oxygen analyzer and oxygen trim control on EUBOILER#1 will fully resolve the alleged violation and prevent a recurrence of excess opacity.

In the future, Dunn Paper plans to enlist McCotter Energy to be present on-site during maintenance work conducted by WPS or facility personnel to ensure proactive monitoring and/or tuning of EUBOILER#1 during restart of the boiler to preclude potential opacity reoccurrences. Dunn Paper will also consider a back-up rental boiler, as permitted in the ROP, as an alternative source of steam for the facility should the boiler exhibit unusual operating characteristics in the future.

If there are questions regarding this response, please contact me at (906) 864-5314.

Sincerely,

Chris Rockey
Quality & Environmental Manager

cc: Ms. Mary Ann Dolehanty, EGLE
Dr. Eduardo Olaguer, EGLE
Ms. Jenine Camilleri, EGLE
Mr. Christopher Ethridge, EGLE
Mr. Ed Lancaster, EGLE
Mr. Kevin French, Dunn Paper
Ms. Mary Mello, NTH Consultants, Ltd.





