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

B287566257

FACILITY: Michigan Sugar Company, Caro Factory		**SRN / ID:** B2875
LOCATION: 819 Peninsular St., CARO		**DISTRICT:** Bay City
CITY: CARO		**COUNTY:** TUSCOLA
CONTACT: Meaghan Martuch , Air Compliance Manager		**ACTIVITY DATE:** 02/01/2023
STAFF: Nathanael Gentle	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: FY23 Scheduled Inspection		
RESOLVED COMPLAINTS:		

On February 1, 2023, AQD staff conducted a scheduled onsite inspection at the Michigan Sugar Company (MSC) Caro Facility, SRN B2875. Staff arrived onsite at 9:30 AM and departed at 12:55 PM. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Renewable Operating Permit (ROP), MI-ROP-B2875-2019a. EGLE staff were assisted onsite by Ms. Meaghan Martuch, Air Compliance Manager, and Mr. Josh Taylor, Factory Manager. At the time of inspection, the facility was found to be in non-compliance.

Facility Description and History

The Michigan Sugar Company Caro Facility is located at 819 Peninsular Street, Caro, MI 48723. The facility specializes in the production of sugar from sugar beets. Sugar beets are trucked to the facility and stored at outdoor piling grounds onsite. The production process begins with the cleaning of sugar beets by means of washing and tumbling. The cleaned beets are then sliced. Beet slices are fed through a countercurrent diffusion tower where sugar diffuses from the beet slices into the liquid solution. From the diffuser, the beet slices are sent through pulp presses to squeeze out liquids. Finally, beet pulp is passed through a rotary pulp dryer to dry the pulp. The dried beet pulp is stored indoors until it is trucked out to be used for animal feed. The liquid, sugar containing, solution is further processed at the facility to extract the sugar. Two lime kilns are operated to produce carbonate and milk of lime. The milk of lime and carbonate are used to remove impurities from the sugar solution. Sugar is crystallized out of the solution and washed yielding the sugar product.

MSC Caro is listed as a major source of carbon monoxide (CO), oxides of nitrogen (NOx), volatile organic compounds (VOC), particulate matter (PM), and hazardous air pollutants (HAPs). The facility is a minor source of oxides of sulfur (SOx) and lead. The facility was last inspected in March 2021. At the time of the March 2021 inspection, the facility was found to be in non-compliance. A Violation Notice (VN) was sent following the March 2021 inspection. AQD staff cited the facility exceeded the then 4,000-hours per year operation limit for EUPULPDRYER. The facility was also unable to provide records of visible emission checks of FG2KILN during periods in which the emission units were vented to the atmosphere. Since the inspection completed in March 2021, the facility has obtained a new permit for EUPULPDRYER in which the operational limit was increased to 4,715 hours per year.

As part of the onsite inspection, AQD staff utilized a Nikon Forestry Pro II Laser Rangefinder to measure the stack heights of permitted emission unit stacks at MSC Caro. Measurements were taken in two-point measurement mode from locations in which both the top and bottom of the stacks were visible.

No recent complaints are on file for the facility.

Compliance Evaluation

EUPACKAGEBOILER3

EUPACKAGEBOILER3 is a boiler rated at 115 MMBtu/hr heat input for 75,000 pounds of steam production per hour. The unit is permitted to burn either No. 6 fuel oil or natural gas. While the unit is permitted to burn No. 6 fuel oil, the facility no longer uses fuel oil in the unit. Facility staff report the piping for fuel oil has been removed from the unit and natural gas is the only fuel used.

An SO_2 emission limit of 1.67 pounds per million Btus of heat input is in place for EUPACKAGEBOILER3, S.C.I.1. Verification of compliance with the emission limit is demonstrated through sulfur content analysis of fuel oil, S.C.V.1. As previously discussed, fuel oil is no longer used in the unit. Visible emission observations must be completed at least once per operating day when firing fuel oil, S.C.VI.1. Records are to be maintained documenting periods in which fuel oil is burned, S.C.VI.3. Being fuel oil is no longer utilized as a fuel source, records documenting periods in which fuel oil is burned and the associated visible emission observation records are not applicable.

The stack vent for EUPACKAGEBOILER3 is permitted to have a minimum stack height of 145 feet above ground, S.C.VIII.1. Multiple measurements were taken with the range finder ranging from 141.1ft to 144ft. Limitations in the measuring technique are believed to account for the variability of measurements. Being a measurement was obtained within 1 foot of the permitted stack height, it is believed the stack vent height is in compliance with the minimum height requirement.

EUBOILER4

EUBOILER4 is a natural gas fired boiler, rated at 146.5 MMBtu/hr heat input for 120,000 pounds of steam production per hour. The boiler is equipped with low NOx burners. Natural gas is the only fuel source used in the unit, S.C.II.1.

The permittee shall not operate EUBOILER4 unless a malfunction abatement plan (MAP) has been submitted and is implemented and maintained, S.C.III.1. Copies of revised MAP and CAM plans were submitted in April 2019 as part of the ROP renewal.

EUBOILER4 shall not operate unless the low NOx burners are installed, maintained, and operated in a satisfactory manner, S.C.IV.2. Staff report burner management inspections are conducted as part of routine maintenance procedures for the unit. The MSC Caro facility utilizes a work order system to track maintenance. The system ensures maintenance activities are conducted routinely and on-time. Burner inspections for EUBOILER4 are conducted by external companies.

EUBOILER4 is equipped with a Continuous Emission Monitoring System (CEMS) to continuously monitor and record the NOx emissions, and O_2 content of the exhaust gas, S.C.IV.4. The most recent Relative Accuracy Test Audit (RATA) was completed on December 1, 2022. Quarterly Quality Assurance Procedures are conducted for the CEMS, S.C.VI.2. Staff report the facility's work order system is utilized to ensure CEMS activities are completed on schedule. Quarterly reports are pulled directly from the CEMS computer by onsite staff. The reports go through an internal review before they are submitted to the appropriate regulatory agency. If excess emissions or monitoring downtime were to occur, the system logs such instances.

A device is in place to monitor and record natural gas usage for EUBOLER4, S.C.IV.3. Records of natural gas usage were provided and reviewed for the period of January 2021 to December 2022, S.C.VI.3. The facility maintains usage records in a spreadsheet. Fuel usage reports are tracked by onsite lab personnel and data is documented monthly in the facility's spreadsheet. Natural gas usage amounts are used to calculate emissions from EUBOILER4. During the period of records reviewed, the month with the highest natural gas usage was January 2022 with 54.57 MMCF of natural gas used in EUBOILER4. Records of 12-month rolling natural gas usage are maintained. During the period of records reviewed the highest 12-month rolling natural gas usage occurred at the end of March 2022 with 418.13 MMCF of natural gas used.

Records of the monthly and 12-month rolling annual capacity factor for natural gas for EUBOILER4 were reviewed for the period of January 2021 to December 2022, S.C.VI.4. Monthly capacity factors are calculated by dividing the actual monthly natural gas usage by the maximum monthly natural gas usage, 145.6 mmcf/month. During the period of records reviewed, the largest monthly capacity factor occurred at the end of January 2022 with 37%. Records of 12-month rolling period annual capacity factor records are maintained. During the period of records reviewed, the largest 12-month rolling annual capacity factor occurred at the end of March 2022 with 33%

Records of the monthly and 12-month rolling total NOx emissions were reviewed for the period of January 2021 to December 2022, S.C. VI.5. NOx emissions are calculated based on natural gas usage and an emission factor derived from the results of a stack test completed on 12/11/2014 which showed a NOx emission rate of 0.138 lbs/MMBtu. During the period of records reviewed, the highest monthly NOx emissions occurred at the end of January 2022 with 3.84 tons/month of NOx emitted. Records of 12-month rolling total NOx emissions are maintained. During the period of records reviewed, the highest 12-month rolling time period occurred at the end of April 2022 with 27.39 tpy of NOx emitted. This is in compliance with the facilities permitted limit of 96.3tpy, S.C.I.1.

As previously discussed, in the records provided, NOx emissions are calculated using an emission factor derived from a stack test completed on 12/11/2014. Special Condition VI.2. states that data from the Continuous Emissions Monitoring System (CEMS) shall be used for determining compliance with the facilities NOx emission limits listed in S.C.I.1 and S.C.I.2. AQD reached out to MSC staff regarding this requirement and requested CEMS records be provided to demonstrate compliance with the NOx emission limits. CEMS records were provided and reviewed for the period of January 2022 to December 2022. NOx emission data provided in the CEMS reports included daily block, 30-day rolling, and daily total emissions. During the period of records reviewed the 30-day rolling average NOx emissions ranged from 0.093 lb/MMBtu to 0.106

lb/MMBtu. This is in compliance with the permitted emission limit of 0.15 lb/MMBtu per 30-day average rolling time period, S.C.I.1. CEMS data was not provided for 12-month rolling time period records. AQD staff reviewed the daily NOx emission totals. During the period of records reviewed, the highest daily NOx emissions occurred on 3/22/2022 with 203.7 lbs of NOx emitted. Using this value, AQD calculated what NOx emissions would be if 203.7 lbs of NOx were emitted each day for 12 months. Assuming 203.7 lbs of NOx per day, 12-month NOx emissions would be 36.7 tpy. This is well below the facilities permitted limit of 96.3tpy, S.C.I.2. Based on the CEMS data provided, it does not appear the facility is exceeding the 12-month rolling NOx emission limit. However, moving forward, the facility needs to maintain CEMS records demonstrating compliance with the 12-month rolling time period NOx emission limit. This was brought to the attention of MSC staff. It should be noted that due to an invalid 2022 third quarter CEM audit, CEM data was invalidated the beginning of the next successive quarter (October 1, 2022) until a valid audit is completed and passed. CEM data cannot be used to demonstrate compliance beginning October 1, 2022, until a valid quarterly audit is completed.

Records of the monthly and 12-month rolling total CO emissions were reviewed for the period of January 2021 to December 2022, S.C.VI.6. CO emissions are calculated based on natural gas usage and an emission factor derived from AP-42. The AP-42 emission factor used is for large wall-fired boilers equipped with Low NOx burners. During the period of records reviewed, the highest monthly CO emissions occurred at the end of January 2022 with 2.29 tons/month. Records of 12-month rolling total CO emissions are maintained. During the period of records reviewed, the highest 12-month rolling time period occurred at the end of April 2022 with 16.35 tpy of CO emitted. This is well below the permitted limit of 147.6 tpy of CO, S.C.I.4.

Records of the monthly and 12-month rolling total CO_2e emissions were reviewed for the period of January 2021 to December 2022, S.C.VI.7. CO_2e emissions are calculated based on natural gas usage and emission factors from AP-42. During the period of records reviewed, the highest monthly CO_2e emissions occurred at the end of January 2022 with 12,349.87 lbs/month of CO_2e. Records of 12-month rolling total CO_2e emissions are maintained. During the period of records reviewed, the highest 12-month rolling time period occurred at the end of April 2022 with 44.04 tpy of CO_2e emitted. Upon review of the calculations for CO_2e emissions, the calculations provided do not appear to be correct. Current calculations appear to be completed by summing emissions of NOx, CO, and CH_4 using AP-42 emission factors. Appropriate calculations would be to sum the CO_2, CH_4, and N_2O emissions. Using the appropriate calculation, CO_2e emissions at the end of January 2022 would be 3274.28 tons/month. Additionally, CO_2e 12-month rolling emissions at the end of the April 2022 would be 23,354.13 tons. With the correct calculations, the CO_2e emissions remain well below the permitted limit of 75,138 tpy, S.C.I.5. The incorrect calculations and the need to correct the spreadsheet was brought to the attention of MSC Caro personnel.

The stack vent for EUBOILER4 is permitted to have a minimum stack height of 150 feet above ground, S.C.VIII.1. Using the range finder, the stack height was measured to be 153.1 ft. The stack vent for EUBOILER4 appeared to be in compliance with the minimum stack height requirements.

FG635DEXGAS1BOILER

FG635DEXGASBOILER encompasses the requirements for boilers and process heaters subject to 40 CFR Part 63, Subpart DDDDD. Emission units at the facility identified as being subject and therefore included in the flexible group are EUPACKAGEBOILER3 and EUBOILER4.

Special Condition II.1. stipulates that liquid fuel shall only be used in the units during periods of gas curtailment or gas supply interruptions. The facility only utilizes natural gas as fuel for both boilers.

Routine periodic maintenance is conducted on both boilers, S.C.III.3. Staff report periodic maintenance is conducted by a combination of internal and external parties. Examples of routine maintenance include tube inspections and burner inspections.

Special Condition V.3. stipulates that a one-time energy assessment must be performed by a qualified energy assessor. AQD records indicate the MACT energy assessment was completed on 12/16/2015. The energy assessment was completed by Armstrong Service Inc. A copy of the complete assessment was provided to the AQD following completion of the assessment.

Both EUPACKAGEBOILER3 and EUBOILER4 are required to complete routine performance tune-ups, S.C.V.4. Tune-ups are required to be completed every 13 months, unless the boiler is equipped with a continuous oxygen trim system that maintains the optimum air to fuel ratio. If boilers are equipped with a continuous oxygen trim system, performance tune-ups must be completed at least every five years. Both EUPACKAGEBOILER3 and EUBOILER4 are equipped with oxygen trim systems and are therefore required to complete performance tune-ups every five years.

Staff report the onsite work order system is used to track when the tune-ups are due. The tune-ups are completed by external personnel. Records of the most recent tune-ups were requested and provided for both boilers. Tune-ups were completed for both boilers on 8/16/2021. MSC staff report an internal checklist was not utilized during the most recent tune-ups. However, an internal Boiler-MACT tune-up checklist has been prepared by MSC staff to be utilized for future tune-ups. A copy of the tune-up checklist was provided. The new checklist will help ensure the tune-up requirements of 40 CFR Part 63, Subpart DDDDD are completed during the tune-ups.

EUPULPDRYER

EUPULPDRYER is a natural gas fired rotary drier used to dry beet pulp. The unit is subject to 40 CFR Part 64 (CAM). Dried pulp is sent to indoor storage where it is kept until it is sold for animal feed. The pulp dryer is equipped with a multiclone collector and flue gas recirculation for pollution control equipment. Materials collected in the multiclone are mixed back into the dried pulp.

EUPULPDRYER shall not operate unless the multiclone collector and flue gas recirculation systems are installed, maintained, and operated in a satisfactory manor, S.C.III.1. MSC staff report annual inspections are completed on the equipment as part of routine maintenance conducted each year between campaigns. The multiclone is equipped with instrumentation to continuously monitor the pressure drop across the multiclone, S.C.IV.1. The permitted indicator range for the multiclone is 2 to 11 inches of water pressure, S.C.VI.6. At the time of inspection, the pressure drop was observed to be 8.12" H_2O. A pulp dryer operator is in place to monitor operating

parameters of the pulp dryer while the unit is operating. Operators record the pressure drop of the multiclone hourly, on the hour, on standardized data log sheets. This ensures the pressure drop is recorded at least three times per shift with at least one hour between recordings, S.C.VI.2. A blank copy of the data log was provided during the inspection. The data log instructs operators to maintain the differential pressures between, 3" and 12" w.c. Staff report the facility is currently in the process of updating the data log with more defined operating parameters. According to MSC staff the goal is to operate the mutliclone at 8.5" to 9" w.c.

If the mutliclone is outside the specified operating range, staff report operators take steps to troubleshoot and correct. If operators are unable to make the correction, the supervisor is notified, and further steps are taken. Staff report procedures are in place for reviewing parameters recorded in the operator logs. MSC has staff who review the operator logs to ensure equipment is operated in the specified ranges.

Multiclone pressure drop records were requested and provided for the months of January 2022, March 2022, October 2022, and November 2022, S.C.VI.2. During the period of records reviewed the pressure drop was maintained within the permitted range of 2 to 11 inches of water pressure, S.C. VI.6. The lowest pressure drop recorded during the reviewed period was 5.55 in H_2O. The highest pressure drop recorded during the reviewed period was 9.49 in H_2O.

The differential pressure instrumentation of the multiclone shall be calibrated once per year during the shut-down of the pulp dryer, S.C.VI.5. Staff report the calibration is conducted by internal personnel. Documentation for the most recent calibration was requested. MSC staff reported that a calibration report was not available for the most recent calibration. Staff said a task order within the system labeled as WO 2210251 AI2 MULTICONE DP INSTRUMENTATION CALIBRATION documents a calibration was completed on 8/10/2022.

The pulp dryer was previously equipped with both primary and auxiliary flue gas recirculation fans. Special Condition III. 4. stipulates that the primary and auxiliary flue gas recirculation fans shall not be operated simultaneously. The pulp dryer is no longer equipped with the auxiliary fan. MSC staff report this condition will be removed from the facilities ROP during the next ROP renewal.

EUPULPDRYER shall not be operated for more than 4,715 hours per year, S.C.III.2. The unit is equipped with an hour meter to track the hours of operation. Staff report the meter is reset to zero on January 1 each year. The system is equipped with a notification system which will send email notifications to the factory manager both when the hour meter is within 250 hours of the 4,715 hours limit and again at 25 hours from the 4,715 hours limit. The facility will shut down the pulp dryer if the yearly operating hours approach the limit in place.

A log of hours of operation of EUPULPDRYER is to be maintained, S.C.VI.3. Records of hours of operation for EUPULPDRYER during the most recent 12-month period was requested and provided. Daily operating hours are entered into a spreadsheet to track total operating hours each year. During calendar year 2021, the pulp dryer was operated for a total of 3,837.10 hours. During calendar year 2022, the pulp dryer was operated for a total of 4,442.50 hours. During the period of records reviewed, the pulp dryer was operated within the permitted limit of 4,715 hours per year, S.C.III.2.

Special condition III.3. states that EUPULPDRYER shall not operate unless a malfunction abatement plan (MAP) as described in Rule 911(2) for EUPULPDRYER operation has been submitted and is implemented and maintained. Updated copies of the facilities MAP and CAM plans were provided and reviewed as part of the 2019 ROP renewal.

The pulp dryer has permitted emission limits for both particulate matter (PM) and PM10. Historically the pulp dryer only had emission limits for PM. PM10 limits were added with PTI No. 56-22. The facility obtained a new PTI for the pulp dryer for the purpose of increasing the annual hours of operation. A Minor Modification Application to incorporate PTI No. 56-22 into the facilities ROP was submitted on June 6, 2022. The revised ROP, MI-ROP-B2875-2019a became effective on December 13, 2022.

Records of PM emissions were provided and reviewed for the period of January 2021 to December 2022. PM emissions are calculated using the hours per day the pulp dryer is operated and the emission rate determined from stack testing on 12/5/2017. The PM emission rate measured during the stack test completed on 12/5/2017 was 22.866 pph. Monthly PM emissions are tabulated and tracked. During the period of records reviewed the highest monthly PM emissions occurred at the end of October 2022 with 16442.92 total pounds. Twelve month rolling calculations of PM are maintained. During the period of records reviewed, the highest 12-month rolling PM emissions occurred at the end of December 2022 with 50.79 tpy. Based on the 2017 stack test emission rate, the facility is below their emission limits, although the December 2022 stack test indicates emissions are much higher.

Records of PM10 emissions are maintained beginning on May 1, 2022 to December2022. PM10 emissions are currently calculated by multiplying daily PM emissions by 0.9. During the period of records reviewed the highest monthly total PM10 emissions occurred at the end of October 2022 with 14798.65 total pounds. Twelve month rolling calculations of PM10 emissions are maintained. During the period of records reviewed, the highest 12-month rolling PM10 emissions occurred at the end of December 2022 with 22.59 tpy. The calculations are based on the 2017 stack test emission rate, although the emissions may be higher based on the December 2022 stack test. Stack testing will need to be completed to determine the PM10 emission rate.

Compliance with the PM and PM10 emission rates is demonstrated by means of stack testing using the appropriate EPA Methods, S.C.V.1. Emission testing is required to be completed every 5 years from the previous test. The most recent stack test was completed on 12/1/2022. Results of the testing showed the emission rates were in exceedance of the PM emission limits. Stack test results showed an average PM concentration of 0.149 lbs/ 1000 lbs. This is in exceedance of the limit, 0.10 pound per 1,000 pounds of exhaust gas, S.C.I.1. The average PM mass emission rate was 37.70 pph. This is in exceedance of the PM emission limit of 27.7 pph, S.C.I.2. In addition to the exceedance of the of the PM emission limits, verification of the PM10 emission rates was not completed. AQD issued a Violation Notice (VN) on 1/25/2023 after a digital copy of the stack test report was received.

Discussions both internally and with the facility are ongoing regarding the violations and the path forward for resolution to ensure future compliance.

The stack vent for EUPULPDYER is permitted to have a minimum stack height of 100 feet above ground, S.C.VIII.1. Using the range finder, the stack height was measured to be 102.4 ft. The stack

vent for EUPULPDRYER appeared to be in compliance with the minimum stack height requirements.

FG2KILN

FG2KILN consists of two vertical lime kilns. The kilns are fired with coke or anthracite coal for the production of carbon dioxide (CO_2) and calcium oxide (lime). CO_2 and lime are used for purification of the sugar juice. Lime is introduced into the sugar process as milk of lime at the carbonation tanks. CO_2 is used for pH adjustment in the carbonation tanks.

Combustion gases from the lime kilns are primarily directed to the carbonation tanks, approximately 80% of the time. The remaining 20% of the time combustion gases are discharged to the atmosphere. At the time of inspection, exhaust gases were being directed to the carbonation tanks.

Except during periods of startup, shutdown and malfunction, the permittee shall not operate the lime kilns unless the carbonation system is operating and receiving combustion gases from the lime kilns, S.C.III.1. Staff explained the lime kilns are an integral part of the sugar production process. Combustion gases are needed to go to the carbonation tanks for sugar purification and therefore the facility does not want combustion gases to be vented to the atmosphere. Staff report startup periods typically occur at the beginning of the campaign, approximately 5 days prior to when slicing begins.

Material limits are in place for the sulfur content of the coke and anthracite coal used in the lime kilns, S.C. I.1 and 2. For each delivery of coke or anthracite coal, the representative sulfur content analysis shall either be on file with the permittee or supplied by the vendor at the time of the delivery, S.C.V.1. MSC staff report a certificate of analysis for sulfur content is provided with each delivery. A copy of the representative sulfur content analysis from the most recent delivery was requested and provided. Coke and anthracite coal were purchased from the C. Reiss Coal Company in Green Bay WI. Sample analysis was completed by Mineral Labs, Inc on 10/17/2022. Results of the analysis show a sulfur content of 0.62% as received and 0.65% on a dry basis. Representative sulfur content analysis show coke and anthracite coal purchased by MSC Caro is in compliance with the permitted limits of 0.8 percent sulfur by weight for both coke and anthracite coal, S.C.II.1. and 2.

At least once per sugar production campaign the permittee shall verify the vendor supplied sulfur content data by conducting an independent analysis in accordance with the ROP Fuel Sampling Plan, S.C.V.1. The Fuel Sampling Plan can be found in Appendix 9 of the facilities current ROP. A copy of the two most recent sulfur content analysis was requested and provided. Sample analysis was completed by Mineral Labs, Inc on 3/7/2022. Results show of sulfur content of 0.6% as received and 0.63% on a dry basis. Sample analysis for the 2022/2023 campaign was completed by Mineral Labs, Inc. on 2/9/2023. Results show a sulfur content of 0.49 % as received and 0.52% on a dry basis. The sampling results indicate compliance with the permitted limits of 0.8 percent sulfur by weight for both coke and anthracite coal, S.C.II.1. and 2. MSC staff report instructions have been recently put together for staff who complete sample collection for the sulfur content analysis to ensure sampling conducted follows the requirements of the Fuel Sampling Plan.

Special Condition I.1. stipulates a PM emission limit of 0.20 pounds per 1,000 pounds exhaust gases, on a dry basis. Compliance with the emission limit is verified by completing non-certified visible emission observations at least once per day when FG2KILNS is venting to the atmosphere, S.C.VI.1. Should visible emissions be observed, the permittee shall immediately implement one of the procedures outlined in Special Condition VI.1.a. and b. If visible emissions are observed either a 6-minute USEPA Method 9 observation shall be completed, or the permittee shall immediately initiate corrective actions and document the corrective actions taken. If the results of the Method 9 observation indicate a violation of the opacity standard, the permittee shall immediately initiate corrective actions and document the corrective actions taken. MSC staff report daily visible emission observations are completed during periods in which the lime kilns are vented to atmosphere. For the visible emission observations, the facility conducts a Method 9 observation rather than conducting non-certified visible emission observations. Facility staff report the need to complete the VE observations during periods when the exhaust fan is operating is included in the operator checklist utilized by lime kiln operators. The facility has staff onsite and on call who are Method 9 certified.

Records of visible emission checks completed in the last 12 months were requested and provided. Records provided included three separate dates observations were completed. Observations were completed on 8/28/2022 from 9:18 to 9:25 AM, 8/29/2022 from 9:00 to 9:06 AM, and 9/21/2022 from 9:00 to 9:06 AM. Records of observations were completed using the EPA Visible Emission Observation Form. All observations were completed by Method 9 certified individuals using Method 9 procedures. Records provided show opacity observed was largely 0%, with a few instances of 5% opacity.

Staff report the need to vent the lime kilns to atmosphere is determined by the kiln burn. If needed, fans will be run to get a better burn. The lime kilns are vented to the atmosphere when the fans are operating. Records shall be maintained including the date, time, and duration that FG2KILNs are vented to atmosphere, S.C.VI.3. Copies of FG2KILN venting records were requested for the last 12 months. MSC staff provided copies of the daily lime kilns operator logs for the dates of 8/28/2022, 8/29/2022 and 9/21/2022. As part of the Lime Kiln Operators Log, staff fill out whether the fans were operating during their shift, i.e. first, second, or third shift. While the logs document the date and shift during which the lime kilns are vented to atmosphere, proper documentation of the time and duration of each venting period is not maintained. AQD brought to the attention of MSC staff that records need be maintained to include the date, time, and duration that FG2KILNs are vented to atmosphere. MSC staff said the operator logs would be updated to include the time and duration the fans are operated and FG2KILNS are vented to atmosphere moving forward.

A material limit of 5000 tons of coke and anthracite coal (total) per 12 month rolling period is in place for FG2KILNS, S.C.II.3. Monthly records of the amount of coke and anthracite coal used in the lime kilns shall be maintained, S.C.VI.4. Staff explained the material is weighed as it is fed into the lime kiln system and automatically logged. The data is then transcribed into a facility spreadsheet. Records of coke and anthracite coal used in the lime kilns for the last 12 months were requested and provided. Records were reviewed for the period of January 2021 to December 2022. During the period of records reviewed, the largest monthly total of fuel used was 322 tons at the end of March 2022. Records of 12-month rolling totals are maintained. During the period of records reviewed, the largest 12-month rolling total occurred at the end of

December 2022 with 2239.00 tons. This is below the permitted limit of 5000 tons of coke and anthracite coal (total) per 12 month rolling time period, S.C.II.3.

The lime kiln stack vent is permitted to have a minimum height of 74 feet above the ground, S.C.VIII.1. Using the range finder, the stack height was measured to be 75.9 ft. The lime kiln stack vent appeared to be in compliance with the minimum stack height requirements.

Summary

On February 1, 2023, AQD staff conducted a scheduled onsite inspection at the Michigan Sugar Company (MSC) Caro Facility, SRN B2875. Located at 819 Peninsular Street, Caro, MI 48723, the MSC Caro Facility specializes in the production of sugar from sugar beets. MSC Caro is a major source of carbon monoxide (CO), oxides of nitrogen (NOx), volatile organic compounds (VOC), particulate matter (PM), and hazardous air pollutants (HAPs). The facility is a minor source of oxides of sulfur (SOx) and lead. As part of the compliance inspection, a written records request was provided to the facility on January 23, 2023. AQD staff requested the records be provided by February 1, 2023. MSC staff were unable to provide the records by the date requested. During the onsite inspection on February 1, 2023, MSC staff agreed to provide the requested records by February 6, 2023. A subset of the requested records was provided on February 2, 2023. On February 28, 2023, AQD reached out to MSC staff as no additional communication or requested records had been received. MSC staff provided additional requested records on March 3, 2023. Records required by the facilities ROP shall be readily available upon request. General Condition 5 of MI-ROP-B2875-2019a states that the permittee shall furnish requested information to the department, within a reasonable time. At this time a VN is not being issued for the delay in which the records were provided. However, future records requests that are not provided within a reasonable time may result in the issuance of a VN.

MSC Caro currently has three outstanding VNs. A VN was issued to the facility on 1/25/2023 following the facility providing a digital copy of the stack test results for EUPULPDREYER completed on 12/1/2022. The results from the stack test showed exceedances for the PM emission limits of 0.10 pounds per 1,000 pounds of exhaust gases and 27.7 pph. In addition, verification of PM10 emission rates was not completed.

Since the onsite portion of the inspection was completed on February 1, 2023, two VNs have been issued to MSC Caro. A VN was issued to the facility on March 8, 2023 by the AQD's Technical Programs Unit (TPU) citing noncompliance with the facilities Continuous Emissions Monitoring System (CEMS) with EUBOILER4. District staff issued a VN to the facility on March 20, 2023, for EUPULPDRYER violation of R 336.1201(1).

At the time of inspection, the facility was found to be in non-compliance.

Nathanael Gerstle DATE 3/28/2023 SUPERVISOR Chris Hare

NAME