

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

M473246072

FACILITY: AmCane Sugar LLC		SRN / ID: M4732
LOCATION: 21010 TROLLEY INDUSTRIAL DRIVE, TAYLOR		DISTRICT: Detroit
CITY: TAYLOR		COUNTY: WAYNE
CONTACT: John Lang , VP Operations		ACTIVITY DATE: 05/29/2018
STAFF: Terseer Hemben	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: PM		
RESOLVED COMPLAINTS:		

INSPECTED BY : Terseer Hemben, MDEQ
 PERSONNEL PRESENT : Dr. John Lang, AmeriCane (VP)
 FACILITY PHONE NUMBER : (313)-299-0234
 FACILITY FAX : (313) -299-1302
 DATE OF INSPECTION : May 29, 2018
 SRN: M4732 AmeriCane Sugar, LLC

FACILITY BACKGROUND:

The AmeriCane Sugar Refining Company (ASRC) is in Taylor, Michigan. The facility has been in operation at the 21010 Trolley Industrial Drive, Taylor address since 1997. The facility produces liquid sugar for use in food products such as ice creams, and soda beverages. The facility operates 2 boilers rated at 31.4 MMBTU/hr. each. The boilers are a 2-pass tube system type operating at 750 HP, and steam output of 40,000 lb. /hr. at low pressure range. The boilers are subject to NSPS Subpart Dc using gas fired heat input capacity ranging 10 -100 MMBTU/hr. each. Boilers No, 1 and 2 were last modified in November 28, 2009. The boilers qualified as NSPS regulated equipment. The facility operates under the Wayne County permits No. C-11547 – C-11548.

INSPECTION NARRATIVE

I arrived at AmCane Sugar LLC plant on May 29, 2018 at 1100 hours. The purpose of visit was to conduct a scheduled annual compliance inspection. Temperature at the hour was 82 F with wind speed 11.5 mph coming from the SE. Humidity was 54%. I was received by Dr. John Lang, the Vice President of the Company. Dr. Lang and I went through the pre-inspection conference items in his office before taking a tour of the plant to inspect the heaters, boilers, gas flow meters stacks and ducts. We went through the post-inspection conference after the plant tour. During the post-inspection, Mr. Lang informed the burners in the boilers were replaced with new ones of same capacity as rated above. The 2 stacks received approval for a minor modification, but construction is yet to start. I left the area at 1334 hours.

COMPLAINT/COMPLIANCE HISTORY:

There has not been any complaint against the facility since the last inspection.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING VN'S:

ASRC is yet to resolve the VN requiring correction of originally specified stack dimensions.

OPERATING SCHEDULE/PRODUCTION RATE:

The ASRC plant operates 24 hours per day, and 6 days a week or sometimes offers alternative schedule of 12 hours per day, and 5 days per week in a year. The boilers are designed to operate 24 hours per day, and 7 days per week but on a limited schedule, except when shut down for maintenance. The limitation sets the boilers to operate at a sequence. One boiler operates at full load capacity, while the other boiler operates at lagging 30% capacity. The sequence is rotated by shifting duties as desired.

EQUIPMENT AND PROCESS CONTROL:

The ASRC energy process uses an evaporator that consumes most energy supplied to the plant in comparison with other units. The evaporator alone utilizes steam generated in the amount 2.2 MMBTU/hr. The nos. 1 and 2 boilers have equal efficiency rating. Operationally, the Boiler no. 1 is utilized as a primary steam generator, while the no. 2 is used as a backup (secondary) steam generator. The target production

rate for the process is 350 tons per day or 100,000 tons per year. In a typical shift operation, the facility utilizes manpower of over 20 crew members. The process consists of melting of raw sugar on the hot plate installed in a 20,000-gallon tank and charging the melt with water. The resultant solution is pumped into separate vessels for crystallization. Filtered supernatant is passed through a heat recovery unit located outside the building called the cooling tower. The crystalized products and molasses are dried under air-tight conditions and shipped as desired. Special products are bleached for color removal using activated carbon. All spent activated carbon are hauled out and disposed under contractual agreement. The final products are stored under 100 F in sealed tanks with UV sterilizers. Energy consumption is optimized using the ratio of 100 cu.ft./100 lb. of sugar processed. The process utilizes a single cyclone dust collector for add-on particulate matter pollution controls associated with operations.

Applicable Rules Wayne County Department of Environmental Quality Permit Conditions:

Based on Rules: R 336.1901; R 336.1201; R 336.1301; Boilers (2)-NSPS requirements; Act 451, WC permits: C-11547 –C-11548.

Rule 201(1) - ASRC fulfilled the rule under the Wayne County permits. The Company stated the communication with the AQD permitting unit and the EAC for going forward with plans to resolve the VN by correction of the dimensions of the 2 stacks has been ongoing. The communication is regarding the violation notice issued by the AQD since 2016. Design plans have been completed and await contractual approvals to commence the modification work. No other modification development was made at the facility since the last inspection. [Attachment pg. 1, Response item# 1].

SC. 17. ASRC maintained the maximum heat input into Boiler No 1 or Boiler No. 2 did not exceed 31.4 MMBTU/hr., and the maximum combined heat input into Boilers 1 and 2 did not exceed 62.8 MMBTU/hr. as permitted in Wayne County Air Pollution regulations. ASRC stated the energy input capacities of the boilers did not change, and each boiler is set by a licensed third-party service provider to deliver natural gas at no more than rated capacity. Therefore, there was no exceedance in maximum heat input as stated in Response # 2, Attachment Pg. 1 and Pg. 4.

SC. 18: ASRC demonstrated the permittee burned only natural gas as fuel. The ASRC stated the only fuel used for heating processes at the facility was natural gas. Records submitted by the gas supplier covering the last 12 months indicated only the natural gas fuel was used as fuel at the facility [Attachment Pgs. 1, Response# 3, and Pgs. 4-39]. Staff observed the only fuel type supply system to the boilers is natural gas.

SC. 19: ASRC could not determine the exceedance of limits as listed in Table 1. According to the Company manager, the 2017 MAERS report were made in error by a factor of 100 in exceedance. The Company manager confirmed there was a data entry error during the accounting procedure, hence new recalculations are underway. Calculations of emissions for MAERS covering the last 12 months were presented for the single and combined boiler emissions. Additionally, emission limits registered in the permits for the combined boilers 1 and 2 listed in Table 1. However, the CO limits specified appeared to be in error during the permitting procedure with respect to single boiler limit and combined boilers limits. ASRC acknowledged the error and stated correction process was initiated with the AQD permitting unit [Attachment Pg. 2]. Compliance could not be ascertained due to the error.

Boiler	Pollutant	Pounds/Hour	Tons/year	Lbs./MMBTU
31.4 MMBTU: No. 1 or No. 2	PM-10	0.1	0.4	0.003
	NOx	4.4	16.5	0.14
	Sox	0.02	0.08	0.0006
	CO	1.1	4.13	0.036
62.8 MMBTU Combined Boiler 1 and 2	PM-10	0.2	0.8	0.003
	NOx	8.8	33	0.14
	Sox	0.04	0.15	0.0006

	CO	2.2	9.64	0.035
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Table 1. Allowable Limits for Pollutants Listed in Permits.

SC. 20: ASRC stated that visible emissions from the boilers when firing natural gas did not exceed a 6-minute average of 5% opacity. ASRC stated the trained operator reported no exceedance in opacity [Pg. 1]. At the time of this inspection there was no opacity from the boilers.

SC. 21: ASRC did not fire each boiler with natural gas for more than 7500 hours per year. Data submitted by the Company covering the last 12 -months period showed the Boiler# 1 was operated for 6818 hours, and Boiler# 2 was operated for 7321 hours per year [Pg. 6, Response# 6].

SC. 22: ASRC did not use natural gas in exceedance of 232.5 Million cubic feet per year. Records of natural gas supplied indicated the total maximum natural gas supplied to the facility was 209.1 Million cubic feet. per year [Pg. 6].

SC. 23: ASRC did not discharge exhaust gases from the boilers unobstructed vertically upwards to the ambient air through the stacks with maximum diameter 24 inches for Boiler No. 1 with exit point of 48 feet above ground; and 26 inches for Boiler No. 2 at exit point 42 feet above ground level. Statement from Company indicated the company was working on the contract to re-construct the stacks without rain caps. Visual inspection of the stacks confirmed vertical positions of the stacks with rain caps installed [Pg. 2, Response# 8].

SC. 24: ASRC submitted the monitored and recorded amounts and types of fuel combusted in each boiler in a manner and with instrumentation acceptable to the Division. All such records including the 12-month rolling time of PM-10, SO₂, CO, and NO_x emission calculations and zero opacity had been kept on file for the most recent two-year period and to be made available to the Division upon request consistent with NSPS Subpart Dc recordkeeping consistent with 40 CFR 60.48c(g)(2) requirements. Records covering the last 12 months were submitted for evaluation [Pgs. 4].

SC. 25: ASRC stated that verification of PM-10, SO₂, NO_x, and CO emission rates from the Boilers by testing at owner's expense, in accordance with Division requirements requested by the Department was made. Additionally, the Company contacted a consultant seeking help to conduct the verification of stack emissions with approval from the department. AQD did awaits the outcome [Pg. 2, Response# 10; Pgs. 11-12].

Discussion of Applicable Rules

Rule 201(1):

The facility holds permits issued by the Wayne County Department of Health and Environment. The natural gas fired boilers, and associated heating equipment such as the hot plate, dryer/evaporator/crystallizer installed at the facility were covered by the WC permits; C-11547-C-11548 and supported by exempt rules such as Rule 285 and Rule 290.

Rule 301:

Boilers (2): NSPS requirements applied. The boilers were modified as follows: Boiler no. 1 was modified in July 15, 1996. Boiler no. 2 was modified in November 28, 2009. The modifications involved change of nozzle dimensions from 10 inches (diameter) to 12 inches (diameter). MAERS report was submitted. The two boilers have the capacity to deliver 31.5 MMBTU/hr. each, simultaneously. Recently, the heating burner in Boiler# 1

was replaced with a new one with equivalent heat input rating. The modification was supported with exempt rule 285(b)(viii) application.

The Boilers were in operation at the time of inspection. Boiler#2 (800 HP) was idling on 35 % capacity, while the Boiler# 1 (750 HP) was in delivery at the required capacity. There were no standing open containers with liquids in the boiler area.

The NSPS Subpart Dc rule applies to the ASRC facility. The facility boilers have heat input capacity of 31.5 MMBTU when fired with natural gas and were installed after 1989. These boilers were modified in 1996 and 2009. The modifications in 1996 and 2009 adopted sole use of natural gas for heating. The Subpart Dc requirements are met because fuel records were kept in accordance with 40 CFR 60.48c(g)(2).

Rotary Dryer installed at the facility uses natural gas as fuel. The gas consumption record for the last 12 months is listed in the 2017 MAERS calculations. Emissions from the dryer were cleaned with a control device using a single cyclone dust collector/mist eliminator. The dryer is exempt under Rule 290 because of use of control device. The dryer used natural gas as fuel. Records of maintenance of the dryer were kept on file.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

This facility did not have nor needed fugitive dust plan.

MAERS REPORT REVIEW:

The ASRC timely submitted the 2017 MAERS. The MAERS was reviewed and found to have inaccurate data entry. The Company is revising the MAERS report.

FINAL COMPLIANCE DETERMINATION

The determination of compliance following this inspection concluded the ASRC facility was in non compliance with requirements of exhaust gases discharge, however record keeping, visible emissions, fuel, criteria pollutants emission limits, and submittal of MAERS were in compliance .The boilers' operation was satisfactorily monitored, and records were kept on file. The cooling tower was free of unusual odors.

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DATE 9/18/2018

SUPERVISOR JK