

MANILLA
M4764

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

M476445378

FACILITY: FORD MOTOR CO ELM STREET BOILERHOUSE		SRN / ID: M4764
LOCATION: 1200 ELM ST, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: Robert Frew , PTME Senior Environmental Engineer		ACTIVITY DATE: 07/31/2018
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

COMPANY NAME : Ford Motor Company Elm Street Boilerhouse
FACILITY ADDRESS : 1200 Elm Street, Dearborn 48124
STATE REGISTRAT. NUMBER : M4764
NAICS CODE : 541712
LEVEL OF INSPECTION : PCE
DATE OF INSPECTION : 7/31/18
TIME OF INSPECTION : 10:00 AM
DATE OF REPORT : 8/5/16
REASON FOR INSPECTION : Annual Compliance Inspection
INSPECTED BY : Jorge Acevedo
PERSONNEL PRESENT : Nathaniel Ampunan, Robert Frew
FACILITY PHONE NUMBER : (313)
FACILITY FAX NUMBER : (313)

FACILITY BACKGROUND:

Ford Motor Company, Elm Street Boiler-house (FMCB) is located on 1200 Elm Street, Dearborn, Wayne County. Elm Street Boilerhouse is a major source for pollutants. The facility is subject to PSD regulations for major modifications. The boiler-house comprises 5 boilers labeled 1 through 5. Boilers 1, 2, and 3 are older natural gas/No. 2 oil fired equipment. These boilers are rated at 70,000 pounds of steam per hour for 1 and 2. Boiler three is rated at 100,000 pounds of steam per hour. Currently, the back-up option of using No. 2 oil fuel has been disengaged. Boilers 4 and 5 were commissioned in 1997. Boilers 4 and 5 have the capacity to deliver 95,000 pounds of steam per hour. However, the commissioned boilers were limited to the capacity of 81,700 pounds of steam per hour in conformation to the NFPA. 8501 (1992 Edition), paragraph 4-5 of the standard code. Boiler #5 discharges exhaust gases vertically through a bypass over 20 feet above the structure. Gases exit at temperature 300 F, and at the volumetric rate of 26,000 cfm.

INSPECTION NARRATIVE:

On July 31, 2018, I conducted an annual compliance inspection of the Ford Motor Company Elm St. Boiler house. I arrived at the facility at 10:35AM and met with Robert Frew, environmental staff for Ford Motor Company. I also met with Nathaniel Ampunan, Chief Power House Engineer. We went into Mr. Ampunan's office and discussed the purpose of the inspection. We briefly talked about the new DTE project which involves constructing turbines and heat recover steam generators. This project would replace the need for the Elm Street Boilers. Both Mr. Frew and Mr. Ampunan did not know when the Elm St. Boilers would be taken out of service. Mr. Ampunan briefly went over the history of the Boilers. Mr. Ampunan explained that Boilers 1-3 were installed in the 1950s and 1960s. They were installed to burn natural gas and fuel oil. The fuel oil capability has been removed. Fuel Oil is brought in through tanker truck if needed. The two newer boilers were installed in 1996 and burn natural gas. The Powerhouse maintains a 90000 pounds of steam per hour output during the summer and around 270,000 pounds of steam per hour during the winter. The Powerhouse provides steam and hot water for 21 buildings at the Research and Engineering Center and Greenfield Village.

After a description of the process, we proceeded to inspect the boilers. Mr. Ampunan showed me Boilers 1-3. These were installed prior to August 1, 1967(Rule 201 date) and are grandfathered. Each boiler has four burners and Boiler 3 is the biggest one of the three. We proceeded to Boiler 3. It was currently undergoing a routine inspection so it was not running at the time. We proceeded to Boiler 4. At the time of the inspection it was running at 51% capacity and 82% efficient. Next, Mr. Ampunan showed the water treatment area. He explained that approximately 80% of the condensate was recovered. Boiler 5 was running at 82 % efficiency.

After observing the boilers, we went back to Mr. Ampunan's office. I requested records that are required by the facility's Renewable Operating Permit. I left the facility at 11:40AM AM. I observed the boiler stack from 11:45 AM -11:55AM. I did not observe any opacity.

Mr. Frew submitted records on August 3, 2018.

COMPLAINT/COMPLIANCE HISTORY:

There have not been any citizen complaints registered against Ford.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOVs

None

OPERATING SCHEDULE/PRODUCTION RATE:

Elm street boiler-house normally operates 24 hours per day, and 7 days a week.

PROCESS DESCRIPTION:

The Elm Street Boiler house is designed to fire the five boilers with natural gas and no. 2 fuel oil as back-up. Currently, the no. 2 fuel oil option is disengaged from boilers 1, 2, & 3. The Boilers # 1, 2, &3 are grandfathered, however the facility is required to keep records of operations. The two newer boilers, numbered 4 and 5, are equipped with low NOx burners and the flue gas recirculation for NOx control. The source also has CFC equipment located throughout the facility.

EQUIPMENT AND PROCESS CONTROLS

Table 1. lists the equipment and process conditions:

Unit/Group ID	EU Description	Installation Date	ControlDevice	Flex. Group SV ID
EGBOIL 1	Boiler #1 was manufactured by WT-Wickers, and is rated at 108 MMBTU/hr. Fired with natural gas; uses No.2 fuel oil.	1/157	NA	SVB-1
EGBOIL 2	Boiler #2 was manufactured by WT-Wickers, and is rated at 108 MMBTU/hr. Fired with natural gas; uses No.2 fuel oil.	1/1/57	NA	SVB-1
EGBOIL 3	Boiler #3 was manufactured by WT-Wickers, and	1/1/63	NA	SVB-1

	is rated at 158 MMBTU/hr. Fired with natural gas; uses No.2 fuel oil.			
EGBOIL 4	Boiler # 4 is rated at 99.8 MMBTU/hr. Fired with natural gas; uses No.2 fuel oil.	11/15/1997	NA	SVB1
EGBOIL 5	Boiler # 5 is rated at 99.8 MMBTU/hr. Fired with natural gas; uses No.2 fuel oil.	11/15/1997	NA	SVB-1

APPLICABLE RULES/PERMIT CONDITIONS:

ROP MI-ROP-M4764-2016 was finalized on November 17, 2014.

Permit conditions are evaluated in Appendix A. (Appendix A)

**FGFGBOILER 1, 2 & 3
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION :

Boilers 1 & 2 are rated at 108 MMBTU/hr, each; and Boiler 3 is rated at 158 MMBTU/hr, fired using natural gas.

Emission Units: EUBOIL1, EUBOIL2, & EUBOIL3

POLLUTION CONTROL EQUIPMENT:

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

Permittee shall only fire natural gas in the boilers. ² (R336.1201(3))

Compliance- The fuel line for fuel oil was disengaged several years back.

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

NA

See Appendix 5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall maintain a complete record of fuel oil specifications and/or fuel analysis for each delivery, or storage tank, of fuel oil. These records may include purchase records for ASTM specification fuel oil, specifications or analyses provided by the vendor at the time of delivery, analytical results from laboratory testing, or any other records adequate to demonstrate compliance with the percent sulfur limit in fuel oil.

(R 336.1213(3)(a)(1))

Compliance- Records are maintained and were submitted on August 3, 2018.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A.
(R 336.1213(3)(c)(ii))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30.

(R 336.1213(3)(c)(i))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Compliance Determination
1. SVB-1	174 ²	164 ²	Undetermined- Stack height appeared to be correct height but no measurements were taken.

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FGBOILER 4 & 5
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION:

Boilers #4 and #5 are rated at 99.8 MMBTU/hr each. Both boilers are natural gas fired and use No. 2 fuel oil as backup.

Emission Units: EUBOIL4 and EUBOIL5.

POLLUTION CONTROL EQUIPMENT:

Low NOx burner system and flue gas recirculation system for NOx control

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Compliance Determination
1. Nitrogen oxides	57.2 tons per year combined. ²	Based upon a 12 calendar month rolling time period, as determined at the end of each calendar month	Compliance- Records are kept on fuel usage and emissions have been below 10 TPY for the last couple of years.
2. Nitrogen oxides when firing natural gas	0.06 pound per million BTUs heat input from each boiler. ²	Test protocol	Compliance- Testing was conducted December 10, 2014. Results showed compliance with permit limits.
3. Nitrogen oxides when firing fuel oil	0.10 pound per million BTUs heat input from each boiler. ²	Test protocol	Compliance- Testing was conducted December 10, 2014. Results showed compliance with permit limits.
4. Sulfur dioxide	0.31 pound per million BTUs heat input from each boiler.* ²	Test protocol	Compliance- Testing was conducted December 10, 2014. Results showed compliance with permit limits.
5. Sulfur dioxide	120 ppmv, corrected to 50% excess air. ²	Test Protocol	Compliance- Testing was conducted December 10, 2014. Results showed compliance with permit limits.
6. Sulfur dioxide	35.8 tons per year. ²	Based upon a 12 calendar month rolling time period, as determined at	Compliance- Records are kept and emissions are below 1 TPY.

		the end of each calendar month	
7. Carbon monoxide	10.0 pounds per hour from each boiler. ** 2	Hourly Average	Compliance- Testing was conducted December 10, 2014. Results showed compliance with permit limits.
8. Carbon monoxide	87.6 tons per year combined. ²	Based upon a 12 calendar month rolling time period, as determined at the end of each calendar month	Compliance- Records are kept and emissions are below 2 TPY.

* This is equivalent to using fuel oil with 0.30% sulfur content and a heat input value of 141,200 BTUs per gallon.

**This is equivalent to 0.10 pound per million BTUs heat input from each boiler.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
1. Fuel oil sulfur content	Maximum Sulfur content of 0.30 weight. ²	Instantaneous	FGBOILER 4 & 5	Compliance- Fuel usage is reported quarterly. Fuel analysis is provided when fuel oil is combusted. Fuel oil is below 0.3% by weight Sulfur.
2. No. 2 fuel oil	708 gallons per hour in each boiler.	Hourly Average	FGBOILER 4 & 5	Compliance- Fuel oil usage is reported quarterly. Based on reviews of the last two years, fuel oil usage is below 708 gallons per hour.
3. No. 2 Fuel oil	1,642,210 gallons per year in each	Based upon a 12 calendar month rolling	FGBOILER 4 & 5	Compliance- Fuel oil usage is reported

	boiler.* 2	time period, as determined at the end of each calendar month		quarterly. Based on reviews of the last two years, fuel oil usage is well below material limit.
4. Natural gas	100,000 cubic feet per hour in each boiler. ** 2	Hourly Average	FGBOILER 4 & 5	Compliance- Records received show that last quarter 195140 MCF of natural gas was consumed. This equates to approximate 45,000 cf per hour per boiler.

* This is equivalent to using fuel oil with 0.30% sulfur content and a heat value of 141,200 BTUs per gallon.

** This is based on using natural gas with a heat value of 1,000 BTUs per cubic feet

III. PROCESS/OPERATIONAL RESTRICTION(S)

Permittee shall only fire natural gas and/or No. 2 fuel oil in the boilers.² (R336.1201(3))
Compliance- Facility burns natural gas mainly but has ability to fire fuel oil.

2. The permittee shall not discharge emissions through EUBOIL5 bypass stack for more than 2,160 hours per 12-month rolling time period as determined at the end of each calendar month.²
(R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

Compliance- At the time of the inspection, Mr. Ampunan explained that the bypass is used very rarely. Records were received and the last Boiler #5 bypass was conducted from June 28 – July 12, 2018 in accordance to stack repair and inspection requirements conducted every 5 years.

3. The permittee shall only fire natural gas in EUBOIL5 while discharging emissions through EUBOIL5 bypass stack.² (R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

Compliance- At the time of the inspection, the boilers were not using the bypass and natural gas was being fired.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. Permittee shall not operate either of the boilers unless the associated low NOx burner system and flue gas recirculation system is installed and operating properly.² (R 336.1910)

Compliance- Nox burner system and flue gas recirculation system is installed and appeared to be operating properly.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Once during any calendar year where the fuel oil usage exceeds 5000 gallons, the permittee shall either analyze the following using an approved ASTM method: -

(a) *Sulfur content of fuel oil.*

(b) Fuel oil heating value. (R 336.1213(3))

Compliance- Records were provided for fuel analysis which measured sulfur content. Heating value was not measured. AQD will follow up with facility at next inspection.

2. Within 12 months of ROP issuance the permittee shall verify the CO and NOx emission rates from one boiler, by testing at owner's expense in accordance with EPA Federal Reference Test Methods. A second test, including testing for each boiler, shall be required before the end of the permit term if the first test shows average emissions greater than 90% of the emission limit. Verification of emission rates includes the submittal of a complete report of the test results, within 60 days of the last day of testing. No less than 30 days prior to testing, a complete stack testing plan must be submitted to AQD. The final plan must be approved by the AQD prior to testing. (R 336.1213(3)).
Compliance- Emission testing was conducted in December 2014.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. For each fuel oil shipment, the permittee shall maintain monthly records of the following:

(a) Quantity of No. 2 fuel oil received in gallons. (R 336.1213(3))

(b) Quantity of No. 2 fuel oil individual boiler usage in gallons. (R 336.1213(3))

(c) Fuel supplier certification records listing sulfur content, in weight-percent or parts per million, and heating value for all fuel oil shipments received. (R336.1213(3))

Compliance- Fuel oil shipments are recorded and submitted quarterly to AQD.

Natural gas individual boiler 4 and 5 hourly usage rate (prorated from monthly usage rate) (R 336.1213(3))

Compliance- Natural gas usage is recorded and submitted quarterly to AQD.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

On a quarterly basis, the permittee shall provide a copy of the fuel usage records and fuel supplier certification records for FG Boiler 4 & 5 to AQD.

Compliance- Fuel usage is submitted quarterly.

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions	Minimum Height Above	Compliance Determination
-----------------	----------------------------	----------------------	--------------------------

	(inches)	Ground (feet)	
SVB-1	174 ²	164 ²	Compliance-Stack height and diameter appeared to be correct although measurements were taken.
2. EUBOIL5Bypass	48.0 ²	51.75 ²	Compliance-Stack height and diameter appeared to be correct although measurements were taken.

IX. OTHER REQUIREMENT(S)

The permittee shall comply with the applicable requirements of 40 CFR, Part 60 Subparts A and Dc. Compliance- Fuel usage is tracked and recorded.

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FGBOILERMACT
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

- Boilers 1, 2, 3, 4, and 5, using natural gas and fuel oil as a backup fuel within the Gas 1 Fuels Subcategory, with heat input capacities ranging from 99.8 MMBTU/hr to 158 MMBTU/hr, subject to 40 CFR 63, Subpart DDDDD.

- Emission Unit: EUBOIL1, EUBOIL2, EUBOIL3, EUBOIL4, and EUBOIL5

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

The permittee shall only burn Gas 1 fuel category fuels in the boilers. Gas 1 fuel category includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels. Gaseous fuel boilers and process heaters that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year, are included in this definition. Gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas

curtailment or gas supply interruptions of any duration are also included in this definition. (40 CFR 63.7575)

Compliance- Natural gas is combusted and fuel oil is used as backup.

The permittee shall conduct a tune-up of the boiler or process heater annually (within 13 months) as specified in § 63.7540. (40 CFR 63.7500)

Compliance- Records were received indicating dates of boiler tune up for each boiler.

The permittee must have a one-time energy assessment performed by a qualified energy assessor as required in Table 3 of 40 CFR 63, Subpart DDDD. (40 CFR 63.7500)

Compliance- Facility reported that energy assessment was performed and responsible official certified statement.

The permittee, at all times, must operate and maintain any affected source (as defined in § 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.7500)

Compliance- Boilers appeared to be operating the boilers normally. No poor operating practices were observed during the inspection.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. See S.C. No. IX.1

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. See S.C. No. IX.1

See Appendix 5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. See S.C. No. IX.1

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Semi Annual and Annual Compliance Certifications are submitted every six months.

4. As specified in § 63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. (40 CFR 63.7545(c), 40 CFR 63.9(b)(4), 40 CFR 63.9(b)(5))

Compliance- Boilers are existing.

Permittee that operates a unit designed to burn natural gas, refinery gas, or other gas 1 fuel that is subject to this subpart, and intends to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in §63.7575, shall submit a

notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in §63.7575. The notification shall include the information specified in paragraphs (f)(1) through (5) of this section.

Company name and address.

Identification of the affected unit.

Reason permittee is unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.

Type of alternative fuel that is intended for use.

Dates when the alternative fuel use is expected to begin and end.

Compliance- Natural gas is being combusted.

The permittee shall submit compliance reports as required by 40 CFR 63.7550. The first time period covered by these reports shall be shortened so as to end on either June 30 or December 31, whichever date is the first date that occurs at least 1 year after the compliance date that is specified for the affected source in 40 CFR 63.7495. (40 CFR 63.7550)

Compliance- Reports were submitted.

See Appendix 8

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subparts A and Subpart DDDDD, as they apply to FG-BOILERS-S3. (40 CFR 63 Subparts A and DDDDD)

Compliance- It appears that the facility is operating the boilers in accordance with Part 63 Subparts A and DDDDD.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

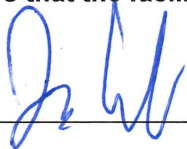
N/A

MAERS REPORT REVIEW

Pollutant	2017 Emissions (TPY)
CO	22.18
NOx	80.55
PM	4.27
Sox	0.34
VOC	3.09

FINAL COMPLIANCE DETERMINATION:

It appears that the facility is operating in compliance with MI-ROP-M4764-2014.

NAME 

DATE 9-24-14

SUPERVISOR W.M.