

J4912
MAWILA

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

J491237449

FACILITY: BEAUMONT HOSPITAL - DEARBORN		SRN / ID: J4912
LOCATION: 18101 OAKWOOD BLVD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: Matt Ronan , Director		ACTIVITY DATE: 10/20/2016
STAFF: Todd Zynda	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

PURPOSE OF INSPECTION: Targeted

INSPECTED BY: Todd Zynda (AQD)

PERSONNEL PRESENT: Matt Rowan, Director; Rick Krohn, Chief Engineer; Timothy T. Turner, Senior Engineer

FACILITY PHONE NUMBER: (313) 313-593-7360

FACILITY WEBSITE: www.oakwood.org

FACILITY BACKGROUND

Beaumont Hospital – Dearborn (BHD), formerly Oakwood Hospital and Medical Center (OHMC), has been serving Dearborn and the surrounding communities for more 60 years. BHD offers services ranging from 24-hour emergency care, orthopedics, neurosciences, women’s health, heart and vascular treatment, and cancer care.

Property surrounding BHD is primarily residential, with some industrial (Ford Motor Company testing and engineering facilities) to the northwest.

COMPLAINT/COMPLIANCE HISTORY

There are no records of complaints for this facility on file.

During inspections of 2010, 2000, 1999, and 1998, the facility was determined to be in compliance with applicable Federal and State air quality regulations. During 2004 and 2006, the OHMC was identified as not operating in compliance, due to their failure to submit their annual emission inventory to the Michigan Air Emissions Reporting System (MAERS). The facility corrected the violations and currently submits MAERS.

During the 2013 the facility was cited for noncompliance with Rule 201 and Rule 210, following the installation of two 2,000 KW emergency generators. The violations were resolved through issuance of Permit to Install No. 57-13.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING LOVs

None

INSPECTION NARRATIVE

On October 20, 2016 the MDEQ Air Quality Division (AQD) inspector Mr. Todd Zynda conducted an unannounced inspection of BHD located at 18101 Oakwood Boulevard, Dearborn, Michigan. During the inspection Mr. Matt Rowan, Director, Mr. Rick Krohn, Chief Engineer, and Mr. Tim Turner, Senior Engineer, provided information and tour of facility operations.

The inspection was conducted to determine the facility’s compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, and PTI No. 57-13. BHD operates three boilers and four emergency generators. During the inspection, no visible emissions were observed.

Boilers

At BHD, three boilers provide space heating and/or process steam. All three boilers have the ability to burn both natural gas and No. 2 fuel oil. Mr. Turner indicated that all three boilers are primarily operated using natural gas. Records indicating the monthly usage of natural gas were provided via email on October 24, 2016. Natural gas usage for all three boilers is recorded through one natural gas meter. Mr. Turner also indicated that the boilers are tested using No. 2 fuel oil on an irregular basis (testing). However, no records were available identifying the No. 2 fuel oil usage. Mr. Ronan stated that the boilers have the capacity to fire fuel and that fuel oil will be used as back up fuel in case of a natural gas disruption.

Boiler 1 and Boiler 2 were installed in 1989 under Wayne County Permit C-8401. Boiler 1 and Boiler 2 are Cleaver -Brooks boilers with a rated heat input capacity of 33,476 million British thermal units per hour (MMBtu/hour). Boiler 3 was installed in 2004 and is also Cleaver-Brooks boiler. Boiler 3 is rated at 32.659 MMBtu/hr. Emissions from all three boilers are discharged through the same stack. During the inspection, the boilers appeared to be operating in good condition. The three boilers are now permitted under PTI 57-13.

Emergency Generators

The facility has four emergency generators that were observed during the inspection. The generator identification, the rated kilowatts (KW), manufacturer, and model are outlined below in Table 1.

ID	Manufacturer	Model	KW	Installation Date	Hour Meter Reading
500KW-A	Cummins	680FDR5058FF	500	Unknown - Pre 2000	1679.5
500KW-B	Cummins	5000DEFD	500	Early 2004	447.4
2MEG1	Caterpillar	3516	2,000	2004	425
2MEG2	Caterpillar	3516	2,000	2004	382

All emergency generators operate using ultra-low sulfur No. 2 fuel oil and have non-resettable hour meters. During the inspection, none of the generators were in operation, but appeared to be in good condition.

Based on the installation dates, the generators are not subject to 40 Code of Federal Regulations (CFR), Part 60, Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines".

APPLICABLE RULES/PERMIT CONDITIONS

Permit to Install 57-13

FG-EMGRICE1-2

SC I. 1 and 2, SC V. 1, SC VI. 2. **NOT IN COMPLIANCE.** NOx emissions shall not exceed 5.4 g/bhp-hr. CO emissions shall not exceed 0.30 g/bhp-hr. At this time testing has not been requested by the AQD. Manufacturers performance data indicates noncompliance with the NOx and CO emission limit.

	"Nominal Data"	Calculated	"Nominal Data"	Calculated
Break Horse Power (Max)	CO (lb/hr)	CO (g/bhp-hr)	NOx (lb/hr)	NOx (g/bhp-hr)
2885	2.48	0.39	52.67	8.29

In addition, PTI 57-13 indicates a break horse power of 2937 for each generator. Performance data indicates a break horse power of 2885.

SC II. 1 and SC VI. 4. **COMPLIANCE.** Shall only burn diesel fuel with maximum sulfur content of 15 ppm (0.0015 percent) by weight. The generators use diesel fuel. The SDS provided indicates that the diesel is "ultra-low sulfur diesel, with 15 ppm sulfur maximum".

SC III. 1 and SC VI 3. **COMPLIANCE.** Shall not operate each engine for more than 500 hours per year on a 12-month rolling basis. Facility records indicate that the highest 12-month rolling hours occurred in unit 2MEG1 at 28 hours (March, April, June through September 2016).

SC VI. 1. **COMPLIANCE.** Required calculations shall be kept in an acceptable format. Records provided appear to meet this requirement.

SC VIII. **COMPLIANCE.** During the inspection, the stacks appeared to meet permit requirements. Measurements were not collected.

FG-BOILER5-7

SC I. 1 and 2, SC VI 3 and 4. **COMPLIANCE.** NOx emissions not to exceed 21.6 tons per year on a 12-month rolling basis. CO emissions not to exceed 36.4 tons per year on a 12-month rolling basis. Records to be maintained in an acceptable format. The facility maintains records as required. The maximum NOx 12-month rolling emissions occurred during February 2015 (8.71 tons). The maximum CO 12-monthly emissions occurred during February 2015 (5.18 tons).

SC II. 1 and SC VI. 2. **COMPLIANCE.** Natural gas usage not to exceed 289.1 million cubic feet (MMCF) per year. The highest 12-month rolling natural gas usage occurred during February and March 2015 at 207 MMCF.

SC II. 2. **NOT IN COMPLIANCE.** Shall only burn natural gas. During the inspection, the facility stated that the three boilers are tested annually using No. 2 fuel oil. No records are maintained of fuel oil combustion.

SC III. 1 and SC IV. 3. **COMPLIANCE.** Shall operate boilers in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions. Shall operate low NOx boilers in a satisfactory manner. The facility appears to meet this requirement.

SC IV. 1. **NOT IN COMPLIANCE.** The heat input capacity of each boiler shall not exceed 33.0 MMBTU per hour each. According to the boiler plates observed during the inspection, the boilers have a heat input capacity as follows.

Boiler #1 and #2 – 33,476,000 BTU/hr

Boiler #3 – 32,659,000 BTU/hr

Boilers #1 and #2 have a heat input capacity greater than 33.0 MMBTU.

SC IV. 2. **COMPLIANCE.** Shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record fuel use. Natural gas usage is monitored monthly through one meter (for all three boilers).

SC V. 1. **COMPLIANCE.** Upon request from the AQD District Supervisor, the facility shall verify NOx and CO emission rates. At this time verification of the NOx and CO emission rates has not been requested.

SC VI. 1. **COMPLIANCE.** Shall complete all required calculations in a format acceptable to the AQD. Records appear to meet this requirement.

SC VIII. 1. **COMPLIANCE.** During the inspection, the stack appeared to meet permit requirements. Measurements were not collected.

Federal Requirements

40 CFR Part 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The diesel fired emergency generators for fire pumps #1 through #4 are not subject to Subpart III as they were installed (constructed) prior to July 11, 2005 (§60.4200(a)(2)).

40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial, Commercial, Institutional Steam Generating Units

Boiler 1 and Boiler 2 were installed in 1989 under Wayne County Permit C-8401. The date of the Permit C-8401 is February 9, 1989. Therefore, per 40 CFR 60.40c, the boilers are not subject to Subpart Dc, as the installation likely took place prior to June 9, 1989. Boiler #3 was installed in 2004 and therefore subject to Subpart Dc.

40 CFR 60.42c(h) and 60.48c(f) – **COMPLIANCE** - Fuel oil sulfur limits may be determined based on supplier certification as described under §60.48c(f). The facility provided the SDS for fuel used in the boilers. The SDS indicates that the fuel is “ultra low sulfur” 15 ppm maximum. The fuel used in the boilers is the same as the fuel used in the emergency generators.

40 CFR 60.43c(c), 60.45c(a) – **NOT IN COMPLIANCE** – On and after the date on which the initial performance test is completed or required to be completed whichever comes first, shall not discharge gases into atmosphere that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent. A performance test shall be conducted using Method 9 of appendix A-4 and the procedure of §60.11 by April 29, 2011 or within 180 days after initial startup of the facility, whichever is later. §60.45c(a) is the element of noncompliance (failure to do an initial test). The AQD did not verify visible emissions greater than 20%. At this time, there is no record of opacity testing conducted on Boiler #3.

Shall install, calibrate, maintain, and operate a continuous emission monitor system (COMS). Boiler #3 is not subject to this requirement to install a COMS per §60.47c(c). The facility only burns fuel oil that is “ultra low sulfur” 15 ppm maximum as described above. Additionally the potential sulfur dioxide emission rate is less than 0.060 lb/MMBTU (assuming 15 ppm sulfur [0.0015 percent], and heat input value of 0.14 MMBtu/hr). The calculated potential SO₂ emission rate is 0.0015 lb/MMBTU.

40 CFR 60.47(a)(1) – **NOT IN COMPLIANCE** – A subsequent test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later. As described above, the facility is not required to install a COMS per §60.47c(c), but if not, then periodic testing is required according to the standard. At this time, there is no record of opacity testing conducted on Boiler #3.

40 CFR 60.48c(g)(2) – **NOT IN COMPLIANCE** – Shall maintain monthly records of the amount of fuel combusted each month. The facility maintains records of natural gas combustion. Records are not maintained for fuel oil combustion.

40 CFR 60.48c(b) and 60.48c(c) – **NOT IN COMPLIANCE** – Shall submit performance test data from the initial and subsequent performance tests. In addition to the applicable requirements of §60.7, the owner or operator shall submit excess emission reports for any excess emission that occur during the reporting period and maintain records according to the requirements of 60.48c(c)(1) through (3). At this time, there is no record of opacity testing or excess emissions reporting for Boiler #3.

40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The generators at the facility are not subject to Subpart ZZZZ per 40 CFR 63.6585(f)(3).

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources

Subpart JJJJJJ applies to boilers not classified at “gas-fired boilers” at area sources. The boilers at the facility are permitted as natural gas boilers. Fuel oil backup does not reclassify the boilers from “gas-fired boilers” and, therefore, Subpart JJJJJJ is not applicable. Should fuel oil usage in the boilers exceed Subpart JJJJJJ thresholds, Subpart JJJJJJ would be applicable. The AQD is not the delegated authority for Subpart JJJJJJ.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Emergency Generators

Generators 500KW-A and 500KW-B operate at 500KW per hour (KW/hr). Based on calculations, the 500 KW/hr power output rating is equivalent to 1.7 MMBTU rated input. At a 25% efficiency conversion, the maximum converted rating is approximately 6.8 MMBTU/hr. Based on the calculated rating, the emergency generators 500KW-A and 500KW-B are exempt from PTI under the following Rules.

R336.1285(g): "Permit to install does not apply to...Internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input."

Sterilizers

The sterilizers present at the facility are steam (autoclave) units and are exempt from PTI requirements under the following Rule.

R336.1281(i): "Sterilization equipment at medical and pharmaceutical facilities using steam, hydrogen peroxide, peracetic acid, or a combination thereof."

POTENTIAL TO EMIT EVALUATION

The facility potential to emit for NOx and SO₂ was evaluated as part of this inspection.

Boiler Rated Heat Input (BTU/hr)	Fuel Oil Heating Value (Btu/gal)	gallons fuel per year	Nox emission factor (lb/gal)	NOx PTE tpy	SO2 emission Factor (lb/gal)	SO2 PTE tpy
32,659,000	140,000	2,043,520	0.02	20.4352	0.0426	43.52698
33,476,000	140,000	2,094,641	0.02	20.94641	0.0426	44.61586
33,476,000	140,000	2,094,641	0.02	20.94641	0.0426	44.61586
					SO2 PTE	132.7587
Generators		NOx (pound per hour)	Emergency Hours			
2MEG1		52.67	500 hours	13.25		
2MEG2		52.67	500 hours	13.25		
Cummins 500KW	Emissions obtained from PTI57-13 application			4.0985		
Cummins 500KW				4.026		
			NOx tons per year	96.95253		

Based on PTE evaluation above, the NOx PTE is less than 100 tons per year. The PTE for SO₂ is greater than 100 tons using fuel oil with a sulfur content of 0.3 percent (R336.1402(3), Table 43). While, the facility uses ultra-low sulfur fuel as described above, the facility does not have any sulfur content restrictions in PTI 57-13 for the boilers. A violation will be issued for Rule 210.

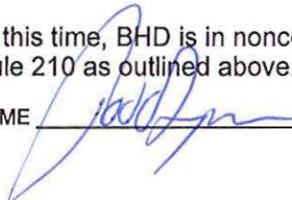
The facility is not located in the SO₂ nonattainment area in Wayne County. The facility is not subject to prevention of significant deterioration (PSD) as the facility is not a major source as defined under R336.2801(cc)(i)(V). The combination of the boilers is less than 250 MMBTU per hour heat input. Additionally, the facility does not emit or have the potential to emit 250 tons per year or more of a regulated new source review pollutant (R336.2801(cc)(ii)).

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not Applicable. All lots are paved.

FINAL COMPLIANCE DETERMINATION:

At this time, BHD is in noncompliance with several aspects of PTI 57-13, Subpart Dc requirements, as well as Rule 210 as outlined above. A violation notice will be issued.

NAME  DATE 11/23/16 SUPERVISOR JK