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

M203272816

FACILITY: COREWELL HEALTH-BUTTERWORTH CAMPUS		**SRN / ID:** M2032
LOCATION: 100 MICHIGAN ST NE, GRAND RAPIDS		**DISTRICT:** Grand Rapids
CITY: GRAND RAPIDS		**COUNTY:** KENT
CONTACT: Greg Cole , Director, Facilities Operations		**ACTIVITY DATE:** 07/11/2024
STAFF: April Lazzaro	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff, April Lazzaro arrived at the facility at 10:00 AM to conduct an unannounced, scheduled inspection. On the morning of the inspection, I emailed the facility to coordinate on-site staff to meet with me in the main lobby. Upon arrival, no odors or visible emissions were identified. During the inspection, I was accompanied by Greg Cole, Director of Facilities Operations and Jessie Chrispell, Facilities Intern.

FACILITY DESCRIPTION

This Corewell Health facility consists of various medical buildings spread over multiple addresses including 25 and 35 Michigan Avenue, the Lemmen-Holton Cancer Center, Helen Devos Children's Hospital, and the Butterworth Hospital complex. The facility operates equipment at this stationary source pursuant to Permit to Install (PTI) No. 134-22 which includes source-wide Title V opt-out emission limitations on the facility's potential to emit of Nitrogen Oxides (NO_x). The permit includes requirements for three boilers, seven emergency generators and two combined heat and power engines, as well as all other fuel burning equipment at the stationary source. In addition to being subject to Michigan permitting requirements, equipment at the facility is subject to the New Source Performance Standards (NSPS) under 40 CFR Part 60, Subparts Dc, IIII and JJJJ and the area source National Emission Standards for Hazardous Pollutants (NESHAP) under 40 CFR Part 63, Subpart ZZZZ as detailed below.

COMPLIANCE EVALUATION

EUCOMBLABGEN

This emission unit consists of a 1040 kilowatt (1462 hp) natural gas fired emergency engine that was manufactured in 2011. This engine is subject to NSPS Subpart JJJJ and NESHAP Subpart ZZZZ. This engine is required to stack test once every three years or 8,760 hours of operation pursuant to NSPS Subpart JJJJ. The last test was conducted on October 8, 2021, and I was told during the inspection that scheduling for a 2024 test is currently underway and a test plan will be received soon. The permit requires that the plan be submitted lo less than 30 days prior to testing. In the facility recordkeeping, this engine is referred to as the Tower 35 emergency generator.

The emission limits for this engine are verified through testing, and the results from the 2021 test indicated compliance at that time. Hours of operation for the engine are limited to no more than 250 hours per 12-month rolling time period. Records of the hours of operation were requested and received timely. The reported hours of operation for the 12-month period ending in May 2024 was 9 hours. According to the recordkeeping, it has only operated monthly for readiness testing and preventative maintenance activities.

The engine is being maintained and operated in accordance with manufacturer recommendations. An engine maintenance plan is followed in accordance with an annual preventative maintenance schedule. The engine serial number is ZBA01185, and the non-resettable hours meter was observed which read 145 hours at the time of the inspection.

FG-BOILERS

This flexible group consists of one Cleaver Brooks 800 BHP dual fired boiler (EUBOILER3) with a maximum heat input rating of 32.65 MMBtu per hour and 2 supplemental Johnston boilers (EUBOILER1 and EUBOILER2), which are each 800 HP dual fuel fired with a maximum heat input rating of 32.5 MMBtu per hour. The three boilers generate steam to the hospital for heating, cooling, and sterilization. The boilers are subject to NSPS Subpart Dc and the fuels used are either diesel and natural gas. EUBOILER3 was out of service at the time of the inspection. The serial number for EUBOILER1 is 8982-01, EUBOILER2 is 8982-02 and EUBOILER3 is 01983-4-1. None of the boilers have operated on fuel oil since 2022.

The boilers are equipped with oxygen trim systems and automated fuel monitoring requirements, as well as a low-NO_x burner installed on Boiler 3. All boilers are operated and maintained in accordance with manufacturer specifications and a malfunction abatement plan is implemented which has been provided to the AQD during previous inspections.

The permit requires that the facility maintain a record of fuels used, and operating hours, although neither are limited except through meeting the emission limits. Emissions calculations are a combination of hours of operation and data obtained through the use of emission factors. Records were requested and received timely.

Additionally, diesel fuel is limited to a sulfur content of 15 ppm which is considered Ultra Low Sulfur Diesel (ULSD). Documentation provided by the facility shows that ULSD has been purchased and received from Crystal Flash.

FG-ENGINES

This flexible group consists of five 2,000 kw diesel emergency generators (EUSBJ00873, EUSBJ00876, EU6HN01650, EU6HN00382, and EU6HN00383) and one 1,600 kw diesel emergency generator (EULHCPGENSET).

Emergency generators EUSBJ00873, EUSBJ00876 are referred to Engine 1 and 2 respectively. The serial number for EUSBJ00873 is CAT3516CJSBJ00873 and the operating hours on the non-resettable hours meter at the time of the inspection was 857 hours. The serial number for EUSBJ00876 is CAT3516CASBJ00876, and the operating hours on the non-resettable hours meter at the time of the inspection was 756.8 hours. EULHCPGENSET is referred to as Engine 4 with a serial number of 8DM00705 and the operating hours on the non -resettable hours meter at the time of the inspection was 1269.7 hours. The serial number for EU6HN00382 known as Engine 5 is 8DM00706 and the operating hours on the non-resettable hours meter at the time of the inspection was 1224 hours. The serial number for EU6HN00383 known as Engine 6 is 8DM01359 and the operating hours on the non-resettable hours meter at the time of the inspection was 1468.1 hours.

These engines considered certified engines and are subject to 40 CFR Part 60, Subpart IIII. Note, that there is currently no engine identified by the number three.

Records of operating hours for each emergency generator was requested and received timely. The maintenance logs indicated that there were some hours of operation in December during a substation upgrade, however the recordkeeping indicated that was in November. I requested additional information from the facility to clarify this information and found that the initial data received had some incorrect information. This information has been corrected and updated records have been submitted. The operating scenario, which started as readiness testing that continued beyond that, would fall under operating the engine for up to 50 hours per calendar year for non-emergency situations. The total time of operation that day was 27 hours and is therefore less than 50 hours. Additionally, none of the engines exceeded 100 hours of operation during a 12-month rolling time period for maintenance checks and readiness testing. All units that burn diesel only ULSD fuel with a

sulfur content of 15 ppm as indicated in the fuel oil certifications, otherwise pipeline quality natural gas is used. Maintenance records were requested and received timely. A review of the records was conducted.

FGCHPS

This flexible group consists of two 23.4 MMBTU/hr natural gas fired combined heat and power (CHP) engines used for electricity generation and heat via steam consisting of EUCHP1 (Engine 101) serial number GFRO1290 and EUCHP2 (Engine 202) serial number GFRO1289. At the time of the inspection CHP1 was operating and a Caterpillar Engine service technician was on site. It was running at 2454 kW, and any time the unit is operational, the facility is using the power generated. We discussed the catalyst pressure drop which was at 10" H_2O overall. The technician stated that a pressure drop of 15" H_2O is cause for action and 20" H_2O is considered out of spec and the engine will not operate. The exhaust temperature was 650°F. It is noted that the power output was 2234 kW and the catalyst was at 6.5" H_2O during the 2023 stack test.

These engines are operated in a non-certified manner, and Corewell indicated that they are unable to be operated in a certified manner per the manufacturer. Maintenance records were requested and received timely. A review of the records was conducted.

Emission limits are met through a combination of stack testing and emission factors. NOx emissions are limited to 33.4 tons per 12-month rolling time period. The units began operation in July 2023, and as such have 10 months of data available. The NOx emissions from start-up through May 2024 were 20.69 tons. The CO emissions are limited to 12.4 tons per 12- month rolling time period. The CO emissions from start-up through May 2024 were 0.18 tons. During the 2023 stack test, the data indicated compliance with the remaining emission limits.

FGFACILITY

This flexible group consists of all source-wide process equipment, including equipment covered by other permits, grandfathered equipment, and exempt equipment.

This flexible group is limited to 89.0 tons per year (tpy) of NO_x emissions, 100,000 gallons of diesel fuel usage, and 1,250 MMcf/yr of natural gas usage based on 12-month rolling time periods. The facility's NO_x emissions limitations are assured through recordkeeping of diesel and natural gas fuel usage. Records of diesel fuel usage, and natural gas fuel usage were requested and reviewed for the time period of January 2023 through June 2024. The reported 12-month rolling diesel fuel usage through May 2024 was 29,652 gallons. The reported 12-month rolling natural gas fuel usage through May 2024 was 272.01 MMcf. The reported source-wide NO_x emissions for the 12-month rolling time period ending in May 2024 was 39.45 tons. These values indicate compliance with permit limits.

Exempt Boilers

Based on information obtained during a 2022 compliance inspection, there are 15 boilers that are exempt from permitting under Rule 282(2)(b)(ii) which have a heat input capacity of less than 10 million Btu/hour. Because ULSD is used at the facility, those boilers burning diesel fuel meet the sulfur content requirements in Rule 282(2)(b)(ii).

Fuel Storage Tanks

There are two 20,000 gallon, above ground storage tanks for diesel fuel. These tanks are exempt from permitting under Rule 284(2)(d).

SUMMARY

Corewell Health was in compliance at the time of the inspection.

NAME April Lazzaro DATE 07/29/2024 SUPERVISOR HH