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

M203261161

FACILITY: SPECTRUM HEALTH-BUTTERWORTH CAMPUS		**SRN / ID:** M2032
LOCATION: 100 MICHIGAN ST NE, GRAND RAPIDS		**DISTRICT:** Grand Rapids
CITY: GRAND RAPIDS		**COUNTY:** KENT
CONTACT: Jillann Koebbe , Air & Water Compliance Group, LLC		**ACTIVITY DATE:** 11/09/2021
STAFF: Michael Cox	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Unannounced Inspection		
RESOLVED COMPLAINTS:		

At 8:00 A.M. on October 8, 2021, and again at 9:30 A.M. on November 9, 2021, Air Quality Division (AQD) staff Michael Cox conducted stack test observation and a scheduled inspection at Spectrum Health Butterworth Campus located at 100 Michigan Street, NE in Grand Rapids. The purpose of the inspection was to determine the facility's compliance with state and federal air pollution regulations as well as compliance with Permit to Install (PTI) No. 112-18. The purpose of the inspection was also to observe stack testing being conducted on an emergency generator, which occurred during the October 8, 2021, site visit. Michael Schmuker, Plant Operations Supervisor, and Jill Koebbe of Air & Water Compliance Group, LLC, provided AQD staff with a facility walkthrough and answered questions asked by AQD staff during the inspection. Ms. Koebbe provided records to AQD staff following the inspection. No visible emissions or odors were noted during the site visit.

FACILITY DESCRIPTION:

Spectrum Health Butterworth Campus 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 primary air pollution sources are from utility equipment including boilers, emergency electric generators, and two aboveground fuel storage tanks. The facility was issued Permit to Install No. 112-18 which includes source-wide Title V opt-out emission limitations on the facility's potential to emit of Nitrogen Oxides (NO_x). The facility is also considered an area source of Hazardous Air Pollutants (HAPs) based on the evaluation of PTI No. 112-18. The source 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.

COMPLIANCE EVALUATION:

EU-COMBLABGEN:

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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. At the time of the October 8, 2021, site visit, this engine was undergoing stack testing as required every three years or 8,756 hours of operation by NSPS Subpart JJJJ. Stack testers from Environmental Stack Testing, which included Ms. Brooke Gillespie were on site as well as AQD Technical Programs Unit staff, Trevor Drost. Testing began at approximately 9:00 AM.

According to the Caterpillar technician on site, the engine load during the first test was noted to be 952 kw, which was within an acceptable maximum load of 10%. All testing was able to be completed on October 8, 2021. No issues were identified with the testing. Test results were submitted to the Grand Rapids District Office on November 22, 2021. The test results indicated that NO_x, Volatile Organic Compound (VOC), and Carbon Monoxide (CO) emissions were within the permitted limits of 2.0 g/hp-hr, 1.0 g/hp-hr, and 4.0 g/hp-hr, respectively.

Records of operating hours and annual maintenance of the engine was requested and reviewed for the time period of November 2020 through October 2021. EU-COMBLABGEN operated for a 12-consecutive month rolling total of 17 hours during this time frame, which is below the permitted 250-hour limit per 12-month rolling time period. The highest 12-consecutive month rolling operating hours for this engine was noted to have occurred during the 12-month period ending in October 2021. Some of the operation was for maintenance checks while there was some emergency operation. The non-resettable hours meter was observed to be installed on the unit. The engine is being maintained and operated in accordance with manufacturer recommendations. The facility keeps a maintenance plan, which was available for review on all their emission units. The last maintenance conducted on this engine was noted to have occurred on June 24, 2021, by Michigan CAT. The engine was noted to be on an annual preventative maintenance schedule.

FG-BOILERS:

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This flexible group consists of one primary 800 BHP dual fires boiler (EU-BOILER3) with a maximum heat input rating of 32.65 MMBtu per hour and 2 supplemental boilers (EU-BOILER1 and EU-BOILER2), 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. These boilers are subject to NSPS Subpart Dc. All notifications and performance testing has already been conducted. EU-BOILER3 was in operation during the site visit, while EU-BOILER1 and EU-BOILER2 were idle. No changes have been made to the three boilers that would increase their respective maximum heat input ratings.

Each unit is meeting the oxygen trim requirements and automated fuel monitoring requirements, as well as a low-NOx burner installed on Boiler 3. All boilers are

operated and maintained in accordance with manufacturer specifications and a malfunction abatement plan is implemented; however, the facility's MAP could not be located in the Grand Rapids AQD facility files and has been submitted historically. Jill Koebbe provided the MAP after the conclusion of the inspection.

Records of natural gas and diesel fuel usage and corresponding hours of operation were requested and reviewed for the time period of November 2020 through October 2021. The records are being maintained on a daily and monthly basis in accordance with the permit. It should be noted that PTI No. 112-18 does not have specific fuel amount or hours limitation in place. The boilers primarily burn natural gas and diesel fuel is used as a back-up fuel source. According to Jill Koebbe, the boilers are tested one day per year using diesel fuel. This testing was last done on August 18, 2020, for EU-BOILER1, March 29, 2021, for EU-BOILER2, and on April 15, 2021, for EU-BOILER3.

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

FG-ENGINES:

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This flexible group consists of five 2,000 kw diesel emergency generators (EU-SBJ00873, EU-SBJ00876, EU-6HN01650, EU-6HN00382, and EU-6HN00383) and one 1,600 kw diesel emergency generator (EU-LHCPGENSET).

Emergency generators EU-SBJ00873, EU-SBJ00876 and EU-LHCPGENSET are subject to 40 CFR Part 60, Subpart IIII. The engines are also certified engines and therefore meet the emission requirements of Subpart IIII.

Records of operating hours for each emergency generator was requested and reviewed for the time period of November 2020 through October 2021. It was noted that all operation of the emergency generators was conducted for maintenance checks, readiness testing, or emergency operation. None of the engines exceeded 100 hours of operation during a 12-month rolling time period for maintenance checks and readiness testing. All units burn only ULSD fuel with a sulfur content of 15ppm. Documentation provided by Spectrum Health-Butterworth show that USLD has been purchased and received from Crystal Flash. Records of diesel fuel usage was requested and reviewed for the time period of November 2020 through October 2021. It should be noted that PTI No. 112-18 does not specify a fuel usage limit for

this flexible group. Maintenance records were requested for the time period of November 2020 through October 2021 for each engine. Annual preventative maintenance on the emergency generators was last conducted on June 18, 2021, June 22, 2021, June 23, 2021, and on June 24, 2021, by Michigan CAT.

It was noted during the site visit that all the emergency generators were installed with a non-resettable hour meter. All emergency generators were verified on site to have the correct kilowatt rating. No electricity generated by these units is sold by Spectrum Health-Butterworth. Spectrum Health-Butterworth is operating and maintaining the emergency generators in accordance with manufacturer specifications.

FG-FACILITY:

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. 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 November 2020 through October 2021. The highest 12-month rolling diesel fuel usage occurred during the 12-consecutive month period ending in January 2021, when 50,522 gallons of diesel was used, which is below the permitted limit. The highest 12-month rolling natural gas fuel usage occurred during the 12-consecutive month period ending in August 2021, when 341 MMcf of natural gas was used, which is below the permitted limit. Due to the facility not exceeding their fuel usage limitations then the facility did not exceed their NO_x emission limitation of 89.0 tpy.

Exempt Boilers:

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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. Also, because they have a heat input capacity less than 10 MMBtu/hour, they are not subject to NSPS Subpart Dc. 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 air use permitting under Rule 284(2)(d).

SUMMARY:

Based on observations made during the inspection and records reviewed, Spectrum Health-Butterworth campus appears to be in compliance with Opt-out PTI No. 112-18 and all other State and Federal air quality regulations.

NAME Michael T. Cox DATE 12/16/2021 SUPERVISOR HH