

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

G506745750

FACILITY: WILLIAM BEAUMONT HOSPITAL		SRN / ID: G5067
LOCATION: 3601 W. 13 MILE RD., ROYAL OAK		DISTRICT: Southeast Michigan
CITY: ROYAL OAK		COUNTY: OAKLAND
CONTACT: Amy Blazejewski , Director of Environment and Life Safety		ACTIVITY DATE: 07/25/2018
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Evaluation of Beaumont's compliance with the Federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules, and the conditions established in Renewable Operating Permit (ROP) No. MI-ROP-G5067-2014.		
RESOLVED COMPLAINTS:		

On July 25, 2018, I (Kerry Kelly, DEQ, Environmental Quality Analyst) and Abigail Slater, DEQ Intern, conducted an inspection of William Beaumont Hospital -Royal Oak Campus (Beaumont), State Registry Number (SRN): G5067, located at 3601 W 13 Mile Road, in Royal Oak, Michigan. The purpose of this inspection was to determine Beaumont's compliance with the Federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules, and the conditions established in Renewable Operating Permit (ROP) No. MI-ROP-G5067-2014.

CONTACTS

The following Beaumont and contract employees assisted me during the inspection by showing me relevant equipment, answering questions, and providing records:

Ms. Amy Blazejewski, Senior Director, Environment and Life Safety
Mr. Rocco Ottolino, Beaumont, Manager, Biomedical Engineering
Mr. Jim Gibson, Beaumont, Bio-medical Technician
Mr. Jerry Meek, Beaumont, Power Plant Supervisor
Mr. Andy Rusnak, Derenzo and Associates, Technical Manager

FACILITY OVERVIEW

The Beaumont Royal Oak Campus is located within an area of approximately four million square feet. The campus is immediately surrounded by residential properties to the east, west, and south and a high school to the north.

MI-ROP-G5067-2014

Equipment permitted in MI-ROP-G5067-2014 consists of five boilers, 10 stationary internal combustion engines (ICE), four ethylene oxide (EtO) sterilizers, a woodworking shop, a paint booth, and a cold cleaner.

BOILERS

The five permitted boilers at Beaumont Royal Oak, located in the West Powerhouse, are used to provide steam for equipment sterilization, cooking, and building heating. These boilers primarily fire natural gas, however, the Michigan Department of Community Health 2007 Minimum Design Standards for Health Care Facilities requires hospitals to have an emergency fuel supply for boilers at hospitals. As a result, the facility's boilers are capable of combusting fuel oil No. 2.

Permit conditions for the boilers are included in the following tables in the ROP: EU-BOILER1, FG-BOILER2&3, FG-BOILER4&5, and FG-FUELOIL. At the time of my inspection, Boilers 3 and 4 were operating. Mr. Gerald Meek, Power Plant Supervisor, explained Beaumont only needs to operate two boilers at a time in the summer.

EU-BOILER 1 (Boiler #1)

Boiler #1 nameplate states it is a E. Keeler Co. boiler with a natural gas capacity of 39,000 cubic feet per hour (approximately 40.2 MMBtu/hour based on natural gas heat value of 1,030 Btu/cubic foot) and manufactured in 1977. This boiler is capable of firing natural gas or fuel oil No. 2 according to the nameplate. I was unable to read the fuel oil No. 2 rated capacity on the nameplate.

SO2 emissions from EU-BOILER1 are limited to 0.33 lb/MMBtu. Compliance with this condition is demonstrated through EU-BOILER1 SC VI.3 and FG-FUELOIL SC VI.1. Based on the emission calculations/records (Attachment 1) and fuel supplier certification (Attachment 2) provided by Mr. Rusnak and Mr. Meeks, the daily SO2 emissions are being calculated in accordance with Appendix 7 and the sulfur content of the fuel is 0.0015

percent by weight. Based on the 0.0015 percent by weight sulfur content of the fuel and a heat rating of 19,453 Btu/pound, the SO₂ lb/MMBtu is 0.001542, which is below the 0.33 lb/MMBtu limit in the ROP.

Mr. Rusnak provided records of the daily and monthly fuel use and daily NO_x and SO₂ emissions for Boiler #1 (Attachment 1), as required in SC VI. 2, 3, and 4, for January 2017 through July 2018. The highest daily NO_x and SO₂ emissions for Boiler #1 were 122 pounds and 3 pounds respectively. Beaumont is using an emission factor of 0.035 lb per gallon for NO_x which is higher than the 0.02 lb per gallon emission factor noted in Appendix 7.2 in the ROP.

The routine preventative maintenance events for all hospital equipment, including the boilers, are recorded in a computer software program (360 System). During the inspection Mr. Meeks provided samples of the 4 month, semi-annual, and annual completed work order from the 360 system and manufacturer (Attachment 3). Mr. Meeks also provided the daily, monthly, quarterly (now 4 month), semi-annual, and annual maintenance procedures for the permitted boilers (Attachment 4). A list of completed preventative maintenance activities for the permitted boilers for 2017 – 2018 was also provided by Mr. Meeks (Attachment 5).

FG-BOILER2&3 (Boiler #2 and Boiler #3)

Boiler #2 and Boiler #3 are both Cleaver-Brooks boilers manufactured in 2001. These boilers are reported as being installed in 2002 and capable of combusting natural gas or fuel oil No. 2. I did not see the rated capacity of Boiler #2 or Boiler #3 on the nameplates for these boilers. The reported heat input capacity for Boiler #2 and Boiler #3 is 48.2 MMBtu/hour using natural gas fuel and 46.4 MMBtu/hour using fuel oil No. 2 each.

Each boiler in FG-BOILER2&3 is limited to 247.2 pounds of SO₂ per day and 23.0 tons of NO_x per 12-month rolling period. Compliance with the SO₂ and NO_x emission limits are demonstrated through recordkeeping requirements in SC VI. 2 and 3 respectively. Emission records provided by Mr. Rusnak for January 2017 through July 2018 (Attachment 1) indicate the highest daily SO₂ emissions for Boiler #2 was 3 pounds and for Boiler #3 was 0 pounds. The highest recorded 12-month rolling NO_x emissions for Boiler #2 was 10.72 tons reported in April 2018 and for Boiler #3 was 9.81 tons reported in February 2018. The low sulfur emissions coincide with the low diesel fuel usage and the "ultra-low" sulfur fuel.

The ROP establishes a natural gas usage limit of 420MMscf and a fuel oil No. 2 usage limit of 200,000 gallons per 12-month rolling period for each boiler individually. Compliance with these material limits is demonstrated through recordkeeping requirements in SC VI. 1. Based on the fuel use records provided by Mr. Rusnak for January 2017 – July 2018 (Attachment 1), the highest 12-month rolling natural gas usage for Boiler #2 was 164.8 MMscf reported in April 2018 and for Boiler #3 was 151 MMscf reported in February 2018. The highest reported 12-month rolling No.2 fuel oil usage between January 2017 – July 2018 for Boiler #2 was 183 gallons and for Boiler #3 was 105 gallons.

Outside of the West Powerhouse I inspected the stacks for Boiler 3 and did not observe any visible emissions from the stack.

FG-BOILER4&5

Boiler #4 is an Erie City boiler with a reported heat input capacity of 48 MMBTU/hour using natural gas fuel and 46.4 MM BTU/hour using fuel oil No. 2. I was unable to read the rated heat input capacity on the nameplate during this inspection due to the position of the nameplate. This boiler is reported as capable of combusting natural gas or fuel oil No. 2.

Boiler #5 is a Keeler boiler with a reported heat input capacity of 48 MMBTU/ hour and is capable of combusting natural gas or fuel oil No. 2. I was unable to read the rated heat input capacity on the nameplate during this inspection due to the location of the nameplate.

Boilers #4 and #5 share a 240 pounds per calendar day SO₂ emission limit and a 48.5 tons NO_x emission limit per 12-month rolling period. Compliance with the SO₂ and NO_x emission limits are demonstrated through recordkeeping requirements in SC VI. 2 and 3 respectively. Emission records provided by Mr. Rusnak for January 2017 through July 2018 (Attachment 1) indicate the highest combined daily SO₂ emissions for Boiler #4 and Boiler #5 were 1 pound. Beaumont is not keeping 12-month rolling NO_x emission records for Boiler #4 and Boiler #5 combined, however, they are keeping records of the total 12-month rolling NO_x emissions for Boilers #1 through #5. The highest recorded 12-month rolling NO_x emissions between January 2017 – July 2018 for Boilers #1 through #5 was 33.43 tons reported in April 2018, which is less than the 12-month rolling NO_x emission limit for just Boiler #4 and Boiler #5 combined.

The ROP establishes natural gas usage limit of 693.8 MM cubic feet and a fuel oil usage limit of 5,250 gallons for Boilers #4 and #5 combined per 12-month rolling period. Beaumont is not keeping 12-month rolling fuel usage records for Boiler #4 and Boiler #5 combined, however, they are keeping records of the total 12-month rolling fuel usage records for Boilers #1 through #5 (Attachment 1). The highest recorded 12-month rolling natural gas usage between January 2017 – July 2018 for Boilers #1 through #5 was 514 MM cubic feet. The highest fuel oil #2 usage for Boilers #1 through #5 between January 2017 – July 2018 was 479 gallons. Both the highest natural gas usage and fuel oil #2 usage between January 2017 – July 2018 for Boilers #1 through #5 were less than the material limits for just Boiler #4 and Boiler #5 combined.

Outside of the West Powerhouse, I inspected the stacks for Boiler #4 and did not observe any visible emissions from the stack.

FUEL OIL USAGE

FG-FUELOIL is comprised of emission units that are subject to sulfur dioxide emission standards and a fuel oil certification; these units include: EU-BOILER1, EU-BOILER2, EU-BOILER3, EU-BOILER4, EU-BOILER5, EU-COGEN1, EU-COGEN2, EU-ELECGEN3, EU-ELECGEN4, EU-ELECGEN5, EU-ELECGEN6, EU-ELECGEN7, EU-ELECGEN8, EU-ELECGEN9, EU-RESGEN1, and EU-RESGEN2. Each shipment of fuel for these emission units is required to contain no more than 0.20% sulfur by weight.

According to records of the fuel storage tanks readings provided by Mr. Meeks for January 2017 and April 2018 (Attachment 6), there were the following two "fills":

April 2017 – Tank No. 12 received 2,499.9 gallons
May 2017 - Tank No. 15 received 11,963 gallons

Mr. Howard Bosch, Lead Tech RO Power Plant for Beaumont, stated the filling of Tank No. 15 in May 2017 was not from a shipment of fuel received, but a transfer of fuel from Tank Nos. 14 and 16. This information is supported by the fuel storage tank records.

As required by their permit, Beaumont provided the certification received from the fuel supplier for the April 2017 shipment (Attachment 2) stating the fuel contained less than 0.0015% by weight of sulfur which is below the permit limit.

EU-ELECGEN5, EU-ELECGEN6, EU-ELECGEN7 are limited to 65,000 gallons combined of fuel oil No. 2 usage per year. EU-ELECGEN8 and EU-ELECGEN9 are also limited to 65,000 gallons fuel oil No. 2 per year combined. Beaumont is not keeping 12-month rolling records of the fuel oil No. 2 used in EU-ELECGEN5, EU-ELECGEN6, EU-ELECGEN7 combined and EU-ELECGEN8 and EU-ELECGEN9 combined, however, Mr. Rusnak did provide 12-month rolling fuel oil No. 2 usage for all permitted boilers and generators at the facility combined (Attachment 1). The highest reported 12-month rolling fuel oil No. 2 usage for all permitted boilers and generators at the facility between January 2017 and April 2018 was 29,801 gallons reported for the month of March 2017.

EMERGENCY GENERATORS

There are 13 permitted ICE in MI-ROP-G5067-2014. These ICE are used for emergency power generation. Three of the permitted ICE have been removed. The ICE that have been removed are; EU-ELECGEN3, EU-ELECGEN4, and EU-ELECGEN5. Conditions for the ICE are located in two flexible groups in the ROP: FG-EMERGENCY and FG-ELECGEN1&2R.

The 2007 Minimum Design Standards for Health Care Facilities Hospitals requires hospitals be capable of providing not less than 72 hours of service at full load in emergency situations. Eight of the 10 stationary ICE at Beaumont are emergency generators that fire No. 2 fuel oil. The remaining two ICE are cogeneration engines capable of firing No. 2 fuel oil and natural gas. Cogeneration units generate electricity and useful heat simultaneously. The heat generated in the cogeneration units at Beaumont can be used in a heat recovery boiler capable of producing 2,000 lbs of steam per hour. According to Mr. Meeks and documentation provided by Beaumont, the co-generation units are currently only using No. 2 fuel oil. At this time the co-gen units are classified in the ROP as emergency engines.

FG-EMERGENCY

FG-EMERGENCY is comprised of eleven engines: EU-COGEN1, EU-COGEN2, EU-ELECGEN3, EU-ELECGEN4, EU-ELECGEN5, EU-ELECGEN6, EU-ELECGEN7, EU-ELECGEN8, EU-ELECGEN9, EU-RESGEN1, EU-RESGEN2. As stated previously, EU-ELECGEN3, EU-ELECGEN4, and EU-ELECGEN5 have been removed from the facility.

During the inspection, I read the manufacturer, size, and fuel capabilities listed on the nameplates of each engine in FG-EMERGENCY. The manufacturer and fuel capabilities for each engine were the same as stated in the ROP. The kW rating listed in the ROP was slightly different (plus or minus no more than 50 kW) than the nameplate kW rating for some of the engines. Records of the engine manufacturer, date engine was manufactured, engine model number, engine horsepower, engine serial number, engine specification sheet, date of initial startup of the engine, and date engine was removed from service at this stationary source was provided by Mr. Rusnak (Attachment 7). The information in this document corresponds with the information I observed on the nameplates for the engines in FG-EMERGENCY.

A NOx emission limit of 82.2 tons for EU-COGEN1&2 is established in this flexible group. Mr. Rusnak provided records for natural gas and fuel oil usage as well as 12-month rolling NOx emission records as required is SC VI. 2, 3, and 4 (Attachment 1). Beaumont is using an emission factor of 0.035 lb per gallon for NOx which is higher than the 0.02 lb per gallon emission factor noted in Appendix 7.2 in the ROP. Beaumont is not keeping 12-month rolling NOx emission records for EU-COGEN1&2 combined, however, they are keeping records of the total 12-month rolling NOx emissions for the permitted boilers and generators at the facility, including EU-COGEN1&2. The highest recorded 12-month rolling NOx emissions between January 2017 – July 2018 for the permitted boilers and generators at the facility was 34.5 tons, reported in April 2018. This is less than the 12-month rolling NOx emission limit for EU-COGEN1&2.

The ROP requires each engine not operate for more than 500 hours per year on a 12-month rolling time period basis and each engine must have non-resettable hours meter to track the operating hours. Mr. Meeks provided records of each engines operating hours for January 2017 through April 2018 (Attachment 8). Based on these records, each engine operated less than 500 hours in 2017.

Records of the routine preventative maintenance events for EU-COGEN1&2 are required in SC VI.5. As noted previously, the routine preventative maintenance events for all hospital equipment, including EU-COGEN1&2, are recorded in a computer software program (360 System). During the inspection Mr. Meeks provided samples of the weekly and annual completed work order and procedures from the 360 system EU-COGEN1&2 (Attachment 9). In addition, Mr. Meeks provided records of the maintenance events performed on EU-COGEN1&2 for January 2017 through August 2018 (Attachment 10).

FG-ELECGEN1&2R

This flexible group includes two 2,000 kilowatts, diesel-fueled, CAT 3516C, emergency engines. During the inspection, I inspected the nameplates on each of the engine FG-ELECGEN1&2R and verified the manufacturer, size, and fuel capabilities for each engine were the same as stated in the ROP. These engines are subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR, Part 60, Subpart IIII.

Emissions from each engine in FG-ELECGEN1&2R are limited to the following in the ROP:

Pollutant	Limit
NMHC + NOx	6.4 g/kW-hr
CO	3.5 g/kW-hr
PM	0.2 g/kW-hr

Compliance with these emission limits is demonstrated by purchasing an engine certified by the manufacturer to meet the emission limits and by operating the engines according to the manufacturer's emission-related written instructions. At the time of my inspection, I noted that each engine had a certified engine plate identifying them as certified Caterpillar engines belonging to engine family: ECPXL78.1NZS.

Per EPA's Engine Family Spreadsheet, (<https://www.epa.gov/sites/production/files/2016-09/nrci-cert-ghg-14d.xls>), the engines' certificate number is ECPXL78.1NZS-024 and each engine has the following certified emission factors (g/kW-hr²):

Steady State NMHC	Steady State NOx	Steady State NMHC + NOx	Steady State CO	Steady State PM	Steady State CO2
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0.26 g/kW-hr	5.07 g/kW-hr	5.3 g/kW-hr	0.9 g/kW-hr	0.12 g/kW-hr	688.40 g/kW-hr
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These emission factors are in compliance with the Subpart IIII emission limits as well as the emissions limits established in the ROP.

Records of the routine preventative maintenance events for EU-ELECGEN1&2R are required in SC VI.5. Mr. Meeks provided preventative maintenance records for EU-COGEN1R for January 2017 through August 2018 (Attachment 11). According to Mr. Bosch the same preventative is performed on EU-COGEN2R, but were not recorded in the 360 system. According to Mr. Bosch and Mr. Meeks maintenance and inspections on EU-COGEN2R will be logged in 360 going forward. Maintenance and inspections performed by Beaumont for the month of July 2018 and by Michigan Cat in January 2018 were provided (Attachment 12).

ETHYLENE OXIDE STERILIZERS

Beaumont Royal Oak personnel use four ethylene oxide (EtO) sterilizers to sterilize temperature sensitive surgical tools such as scopes and lenses. The permit conditions for all four sterilizers are included in MI-ROP-G5067-2014 under the Flexible Group FG-ETOSTERILIZERS. These EtO sterilizers are subject to the National Emission Standards for Hazardous Air Pollutants for Hospital Ethylene Oxide Sterilizers, 40 CFR, Part 63, Subpart WWWW. Three Advanced Technology Safe-Cell System sulfuric acid scrubbers and dry bed chemical filters are used to control emissions from the EtO sterilizers.

The entire process of sterilization takes approximately 15 hours. The actual sterilization period last for 2-3 hours. After sterilization, gas is immediately purged from the chamber and then the chamber is aerated for approximately 12 hours to remove any residual EtO. According to Mr. Gibson, the spent EtO canister for the load is left in the chamber during the aeration process to remove any residual EtO from the canister. The exhaust from each sterilizer is vented to a sulfuric acid scrubber and through a dry chemical bed filter. The EtO is converted to ethylene glycol after being sent through the sulfuric acid scrubber and is collected in a holding tank at the bottom of the scrubber.

I inspected the four, permitted, EtO sterilizers located in the Lower Level of the North Tower at Beaumont Royal Oak. The sterilizers and scrubbers are separated from the adjacent work area by sliding glass doors that require a key-card for entry. The sterilizer room is separated from the scrubber room by a wall with a steel access door. For employee protection, both the room with the sterilizers and the room with the scrubbers are under negative pressure. In the event of an uncontrolled EtO release from the sterilizers or scrubbers, the emissions in the EtO sterilizer room and/or scrubber room will be exhausted directly into the ambient air. In addition, both the EtO sterilizer room and the scrubber room have EtO monitors. The EtO monitor readings can be seen from outside of each of these rooms. At the time of my inspection the readings on each of these monitors was 0.0 ppm. A monitor located in the closed cabinet where EtO containers are stored read 0.3 ppm during my inspection. The Malfunction Abatement Plan for the sterilizers and scrubbers, states that the container storage cabinet exhausts to the ambient air through the acid scrubber bypass stack. AQD permit section staff indicated that the container storage cabinet is intended to be a safety device and is not expected to be a source of continuous EtO emissions. According to Mr. Gibson, it is not uncommon for a monitor to show a slight reading and that the monitor can pick up other substances such as perfumes and cleaning solutions. According to Mr. Gibson, the EtO monitors are set to alarm at 5.0 PPM triggering the air handlers to release to the atmosphere.

Of the four sterilizers I inspected, two (5A and 6A) were Model 8XL and two (7A and 8A) were Model 5XL. The EtO for the sterilizers comes in individual one time use canisters. All of the EtO contained in one canister will be used per load. Use of single-use canisters is another safety measure aimed at ensuring that if a canister leaks or if there is a problem with the sterilization process, only a relatively small, finite amount of EtO will be released into the atmosphere. Mr. Gibson showed me one of the EtO canisters used in the Model 5XL sterilizers. This canister weight was labeled as 100 gram (3.52 oz or 0.22 lbs). The 8XL Models are reported as using 0.37lbs/load. I did not observe the canister used in the Model 8XL sterilizers.

EtO emissions from FG-ETOSTERILIZERS are limited to 0.0059 lb/hour and 3.69 lb/year.

Compliance with the lb/hour limit is demonstrated through manufacturer's stated emissions reduction for the scrubbers and verification of the emission rates if requested by the DEQ. I did not see any stack testing requests from the DEQ or stack testing conducted on the scrubbers in the AQD files in the Southeast Michigan District Office. I was able to locate a copy of the specification sheet from the voided permit files at the DEQ Southeast Michigan District Office (Attachment 13). This document states the removal efficiency of the Safe-Cell System 2002 is typically 99.9% and that actual specifications and dimensions may vary according to process conditions.

Records of the daily and monthly number of loads for each unit and calculations of the 12-month rolling emissions of EtO are required to demonstrate compliance with the 3.69 lbs/year limit. During the inspection, Mr. Gibson provided records of the number of loads per day and month and EtO emissions for March 2016 through July 2018 (Attachment 14). The records provided by Mr. Gibson indicate the highest 12-month rolling EtO emissions between March 2016 and July 2018 was 1.60 lbs reported for December 2016.

The ROP for Beaumont Royal Oak prohibits the operation of any sterilizer in FG-ETOSTERILIZERS unless the acid scrubbers and dry bed filters are installed, maintained, and operated properly and a malfunction abatement plan (MAP) is submitted and implemented and maintained.

During the inspection, I verified the emissions from each sterilizer in FG-ETOSTERILIZERS were ducted to one of three Advanced Air Technologies Safe-Cell System Model 2002 acid scrubbers and dry bed chemical filters. EU-ETOSTERILIZER1, 3, and 5 were operating during the inspection. I noted the following exhaust ventilation differential pressures and scrubber flows during the inspection:

Emission Unit ID in ROP	Unit ID	Model	Associate Scrubber ID	Scrubber Flow Rate (gallons/minute)	Scrubber Exhaust Fan Differential Pressure
EU-ETOSTERILIZER1	5a	8XL	#7	2.8 and 3.2	~2.8" WC
EU-ETOSTERILIZER2	6a	8XL	#8	NA	NA
EU-ETOSTERILIZER3	7a	5XL	#9	3.2	~2.6 WC
EU-ETOSTERILIZER4	8a	5XL	#9	3.2	~2.6 WC

Mr. Gibson provided records of the preventative maintenance checks and alarms for the sterilizers and scrubbers (Attachment 15). The preventative maintenance log includes weekly recirculation pump flow rates for the scrubbers. According to Mr. Gibson, there have been no events in the past two years when EtO emissions bypassed the scrubbers and were released to the ambient air uncontrolled. Mr. Gibson also provided preventative maintenance procedures for weekly and monthly safe-cell inspections and pH testing (Attachment 16). These records appear to indicate the maintenance is done following the procedure, and according to the schedule, outlined in the MAP.

The pH of the acid scrubbing solution in each scrubber is checked monthly to ensure the control is properly working. The pH must be less than 3; based on records of the pH readings provided by Mr. Gibson, the pH was never above 1 in any scrubber for April 2016 – June 2018 (Attachment 17). These records note the pH range for optimal performance of the scrubbers is less than 3.0. Mr. Gibson explained the scrubbing solution is changed approximately every three years or if the pH is greater than 1, per company policy. The last scrubbing solution replacement occurred in May 2015. According to Mr. Gibson, the next replacement is scheduled for September 2018.

Mr. Gibson also provided records of the exhaust fan differential pressure readings recorded during the monthly preventative maintenance for January 2015 through June 2018 (Attachment 18). These records note the differential pressure range for optimal performance of the scrubbers is between 1 and 3 inches water column. The range of differential pressure readings during the reporting period was 2.0 – 2.5 inches water column.

WOODSHOP

Beaumont has a sanding area in the woodshop where particulate emissions are controlled by a Torit baghouse located along the outside of the building. The woodworking operations appear to be exempt from obtaining a PTI pursuant Rule 285(l)(vi)(C). During my inspection, I noted that the dust collector appeared to be maintained and did not observe any fugitive dust.

The flexible group FG-287(c) addresses a paint spray booth located in Beaumont's woodshop. At the time of my inspection, I observed the paint booth and the room the paint booth is located in are being used as storage space with no room to perform painting. According to Ms. Blazewski, the paint booth has not been used in several years.

FG-COLDCLEANERS

There are two cold parts washers at Beaumont Royal Oak. One of the parts washers is located in the West Powerhouse and the other is located in the garage. The parts washer in the West Powerhouse uses an aqueous solution. The cold cleaner in the garage uses Safety Kleen Premium Gold cleaning solvent. According to the SDS, Safety Kleen Premium Gold is composed of 100% by weight petroleum distillates, hydrotreated light and has a vapor pressure of 0.6 mm Hg (0.012 psia) at 100 degrees Fahrenheit. The air/vapor interface of this cold cleaner was less than 10 square feet, there were proper cold cleaning operating procedures posted, the emissions were released to the general in-plant environment, and the lid was closed as required in the ROP.

EQUIPMENT NOT INCLUDED IN ROP

WELDING EQUIPMENT

In the garage, hand welders are occasionally used; these activities appear to be exempt from obtaining a PTI pursuant Rule 285(2)(i).

BOILERS

I inspected 12 boilers in the research building and attic. The information on the nameplates of each boiler matches the description of permit exempt equipment provided in the ROP application. All 12 of these boilers appear to be exempt from PTI requirement in Rule 201 pursuant to Rule 282(2)(b)(i). Three additional boilers are listed in the ROP application under exempt equipment as being located in the research building (EU-BOILER9, EU-BOILER10, and EU-BOILER11). During the inspection, Mr. Meeks indicated that EU-BOILER11 was removed approximately 10 years ago and showed me the space where EU-BOILER used to be located. I observed, during the inspection, that EU-BOILER9 and EU-BOILER10 were dismantled.

FUEL STORAGE TANKS

Beaumont has seven diesel storage tanks ranging in size from 6,000 gallons to 40,000 gallons used for storing fuel for the boilers and ICE at the facility. These tanks appear to be exempt from the requirement to have a PTI pursuant to Rule 284(2)(d) and do not appear to be subject to 40 CFR, Part 60, Subpart Kb.

In addition to the diesel fuel storage tanks, Beaumont has two, 2,000 gallon gasoline storage tanks used to store gasoline that will be dispensed, via one of three pumps, to a variety of vehicles at Beaumont. These tanks appear to be exempt from an obtaining a PTI pursuant to Rule 284(2)(g)(ii) and do not appear to be subject to 40 CFR, Part 60, Subpart Kb. Records of the gasoline dispensed from the three pumps between June 2017 and June 2018 were provided during the inspection (Attachment 19). Based on the records provided, Beaumont dispensed 106,402.3 gallons of gasoline between June 2017 and June 2018; monthly usage ranged from 7,033 gallons to 9,955 gallons. Beaumont is subject to the NESHAP for Gasoline Dispensing Facilities, 40 CFR, Part 63, Subpart CCCCC for the gasoline storage tanks. This rule requires Beaumont minimize gasoline spills, clean up spills as expeditiously as practicable, cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use, and minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators. During the inspection I did not see any gasoline spills, open gasoline containers, or open waste collection systems.

XYLENE RECYCLING

In a room connected to the autopsy room in the South Tower, I inspected a batch xylene recycling unit. This unit has a capacity of 10 gallons of waste xylene. Waste xylene is generated in the surgical pathology unit and is used to get alcohol out during lab, slide stainer, and tissue processing. This emission unit appears to be exempt from the requirement to have a PTI per Rule 285(2)(u).

MICHIGAN AIR EMISSION REPORTING SYSTEM (MAERS)

For 2017, Beaumont reported the following emissions:

Pollutant	Amount
NOx	32.02 tons
CO	23.21 tons
VOC	2.08 tons

PM 10	2.02 tons
PM 2.5	2.02 tons
SO2	770.38 lbs
Ammonia	254.15 lbs
Lead	0.27 lbs
Ethylene Oxide	1.2 lbs

The reported emissions appear to be comparable with the records reviewed during my inspection.

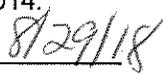
CONCLUSION

Based on information gathered and reviewed for this inspection, William Beaumont Hospital - Royal Oak appears to be in compliance with the Federal Clean Air Act, Michigan's Air Pollution Control Rules, and the conditions established in ROP No. MI-ROP-G5067-2014.

NAME



DATE



SUPERVISOR

