

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

K272963213

FACILITY: Beaumont Hospital Farmington Hills		SRN / ID: K2729
LOCATION: 28050 GRAND RIVER AVENUE, FARMINGTN HLS		DISTRICT: Warren
CITY: FARMINGTN HLS		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 02/10/2022
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2022 SM CMS Scheduled Inspection of Beaumont Hospital (fka Botsford General Hospital), an osteopathic hospital, located at 28050 Grand River Avenue, Farmington Hills, Michigan 480336-5933.		
RESOLVED COMPLAINTS:		

Beaumont Hospital (K2729)**fka Beaumont Hospital (K2729)****28050 Grand River Avenue****Farmington Hills, Michigan 48336-5933**

Name change (2015 merger): Botsford General Hospital (K2729) → Beaumont Hospital (K2729)

Active permit: PTI No. 17-18 (Permit Engineer: C. Asselin or CJ) dated July 27, 2018. The permit consolidated the previously issued permits and Rule 201 exempt equipment (e.g., < 1 MW emergency generator engines) with facility-wide ROP opt-out limit (84.36 < 100 tpy of NOx) as follows:

1. **PTI No. 168-02** for EU-BOILER4 (Boiler No. 4 installed in 1987 [before June 9, 1989]; Boiler No. 4 incorrectly identified as EU-BOILER1 in the permit; PTI obtained after May 4, 2001, VN, not subject to NSPS Dc) dated September 18, 2002;
2. **PTI No. 77-04** for EUBOILER7 & EUBOILER8 (NSPS Dc Boiler Nos. 7 & 8; Supplemental revision on 8/30/2004) dated August 30 2004; Boiler Nos. 7 & 8 were also known as 1A and 2A, which were renamed as 1A and 1B during the consolidation; and
3. **PTI No. 50-12** for EG4 (2012 NSPS 4I Emergency Generator using 15 ppm S ULSD).

4. **PTI No. 83-17** for EU-EG5 & EU-EG6 (2017 NSPS 4I Emergency Generators using 15 ppm S ULSD, EG5 & EG6)

EG4, EG5, and EG6 all have emission limits in the permit that allow for higher emissions than the emission factors used in the calculations of the PTI No. 17-18 application. Including EG4, EG5, and EG6 (EG6 included in the consolidation permit) emission limits, the total facility-wide Potential-to-Emit (PTE) to 84.36 tpy of NOx mostly due to the boilers.

The following generators are treated as exempt equipment and incorporated into PTI No. 17-18, FG-FACILITY with 85 tpy NOx limit:

Exempt Equipment	Description	Exemption Rule
A&E Generator	Cummins Model No. GTA855E natural gas-fired emergency genset rated at 250 kW. Manufactured in 2015. Heat input is approximately 3.4 MMBTU/hr.	Rule 285(g)
Central Generator	Cummins Model No. VTA28-GS1 fuel oil-fired emergency genset rated at 500 kW. Manufactured in 1985. Heat input is approximately 4.6 MMBTU/hr.	Rule 285(g)
Cancer Center Generator	Cummins Model No. GGHE natural gas-fired emergency genset rated at 93.75 kW. Heat input is approximately 1.1 MMBTU/hr.	Rule 285(g)

The exempt status of the equipment may depend on how it is operated, and there may be documentation and/or recordkeeping that is required to maintain the exempt status. Botsford / Beaumont is required to keep records for these exempt generators as well (only ULSD 15 ppm S, < 500 hours per year based upon with non-resettable hours meters). It may be noted that the engines are only used for testing unless there is an interruption of power supply.

Two (2) of three boilers (3 [Nos. 7 / 1A & 8 / 2A / 1B and not No. 4; Boiler Nos. 1A & 2A/1B replaced Nos.1 & 2]) are subject to: federal New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc). Natural gas fired boilers with fuel oil back-up and hence Botsford is fee-subject facility (NSPS D (fka Cat II)) NSPS Dc fuel oil backup).

Fee: Category D (NSPS Dc with fuel oil backup) Air Quality Fee due to fuel oil (only ULSD, < 15 ppm S, is used) back-up of NSPS Dc Boilers.

Three (3) steam boilers may be subject to: NESHAP / Boiler MACT / MACT 6J, 40 CFR Part 63, Subpart JJJJJJ / 6J National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, Page 15554, Federal Register / Vol. 76, No. 54 / Monday, March 21, 2011 / Rules and Regulations / Final rule. This rule does NOT apply to boilers that burn only gaseous fuels or any solid waste. AQD has decided not to take delegation of the area source MACT standards and therefore no attempt has been made to evaluate the Botsford's compliance with NESHAP / MACT 6J.

Three (EG4, 1 MW manufactured in April 2012 (after April 1, 2006) and EG5 & EG6, 1.5 MW each installed in 2017) of four (4) emergency generators (not counting EU-EGEAST which has been removed in 2020) are subject to: NSPS IIII or 4I, New Source Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion (IC) Engines, 39154 Federal Register / Vol. 71, No. 132 / Tuesday, July 11, 2006 / Rules and Regulations / Final Rule. One generator (While 1 MW EU-EGWEST is operating, 1 MW EU-EGEAST has been removed in 2020, both installed in 1992 << 2006) is not subject to NSPS 4I based upon manufacture date (before April 1, 2006).

Not subject to: 40 CFR, Part 60, Subpart Ce, Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Hospital/Medical/Infectious Waste Incinerators, Page 48348 Federal Register / Vol. 62, No. 178 / Monday, September 15, 1997 / Rules and Regulations / Final rule. The hospital is not subject to 40 CFR, Part 60, Subpart Ce, because the two incinerators now are shut down permanently.

NSPS Dc boilers: The boilers (Boiler Nos. 7 / 1A & 8 / 2A / 1B and not 4) are subject to federal New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc). Only NSPS Dc requirement for pipeline quality natural gas fired boilers (no fuel oil backup) is fuel usage recordkeeping. Beaumont complies with this requirement via annual MAERS submittal.

NSPS Dc Revisions:

1. 72 FR 32759 = Page 32759 Federal Register / Vol. 72, No. 113 / Wednesday, June 13, 2007 / Rules and Regulations / Final Rule – to add compliance alternatives and to revise certain recordkeeping and reporting requirements.

2. 74 FR 5091 = Page 5091 Federal Register / Vol. 74, No. 17 / Wednesday, January 28, 2009 / Rules and Regulations / Final Rule - to correct technical and editorial errors.

The NSPS revisions simplified the natural gas usage recordkeeping.

On February 10, 2022, I conducted a level-2 FY 2022 SM CMS Scheduled Inspection of Beaumont Hospital (fka Botsford General Hospital), an osteopathic hospital, located at 28050 Grand River Avenue, Farmington Hills, Michigan 480336-5933. The inspection was conducted to determine compliance with federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; Michigan Department of Environment, Great Lakes and Energy, Air Quality Division (EGLE-AQD) administrative rules; and Permit-to-Install No. 17-8, an ROP Synthetic Minor Permit with 85 tons of NOx per year limit.

During the inspection, Mr. Dan Grater (Phone: 947-521-8203; Cell: 248-709-6910; E-mail: Grater, Daniel B <Daniel.Grater@beaumont.org>), Supervisor, Facilities Management, and Mr. Frank Murray (Phone: 947-521-8715; Cell: 313-617-5771; E-mail: Murray, Frank M <Frank.Murray@beaumont.org>), Director, Facilities Management, Beaumont Health - Farmington Hills Campus, assisted me.

In 1944, Dr. Allen Zieger , D.O. purchased a vacant rooming house in Detroit to start his own 20-bed osteopathic hospital, Zieger Clinic Hospital. It became a fine osteopathic training institution, a tradition that continues today with Botsford's strong partnership with Michigan State University College of Osteopathic Medicine. To expand, Dr. Zieger purchased 15 acres in Farmington Hills on which to construct a new 200-bed hospital. It would be named Botsford General Hospital: its property was adjacent to the historic Botsford Inn, a former stagecoach stop. Zieger's professional staff loaned \$300,000 to help construct the new hospital. Botsford opened its doors in 1965 and has been continually growing ever since to meet the health care needs of its communities that rely on Botsford for its uncompromising commitment to excellence and quality in the delivery of personal and compassionate health care. Its emphasis on putting patients first has garnered strong loyalty from patients and their families.

Botsford Health Care is an integrated health care system, including:

- **Botsford Hospital - a 330-bed teaching hospital and Level II trauma center with 175 residents and 18 accredited residency and fellowship programs. Annually, the hospital cares for more than 16,000 inpatients and 60,000 emergency and trauma patients with 2,500 employees, more than 600 physicians and 300 volunteers.**

- Botsford Commons Senior Community – provides residential choices in Farmington Hills for seniors: independent living in condominiums and apartments, an assisted-living center and a rehabilitation and continuing care center.
- Parastar/Community Emergency Medical Service - receives 911 and non-emergency patient transportation calls and provides ambulance transportation; emergency and non-emergency treatment; educational services to health care organizations, municipalities, and communities; and billing services for 18 ambulance companies and fire departments in four states

Botsford generated \$387.88 million in sales (USD).

About March 2014, Beaumont Health System in Royal Oak, Mich., Oakwood Healthcare in Dearborn, Mich., and Botsford Health Care in Farmington Hills, Mich., finalized their merger and created a new \$3.8 billion nonprofit health system called Beaumont Health.

Beaumont Health System, Dearborn-based Oakwood Healthcare Inc. and Farmington Hills-based Botsford Hospital agreed to finalize a previously announced \$3.8 billion business arrangement. Upon completion of this merger Beaumont Health would control about 30 percent of the inpatient market with eight hospitals and 3,337 beds, 153 outpatient sites, 5,000 physicians and 33,093 employees.

The current medical school affiliations will continue with Beaumont and Oakland University Beaumont School of Medicine, Botsford with the Michigan State University College of Osteopathic Medicine and Oakwood with Wayne State University School of Medicine.

Neither Botsford nor Beaumont (at this Farmington Hills location after acquisition / merger) ever used EO sterilizer. Only steam sterilization was practiced. Most hospitals have moved away from Ethylene Oxide to Hydrogen Peroxide Plasma technology due to high costs of employee health monitoring and indoor air EO monitoring.

PTI No. 93-71I Two Incinerators (one Pathological and one Medical – voided on 01/22/2003 based upon FY 2001 inspection.

Both are physically removed before 2019.

The hospital had two incinerators, which are now inoperable: one burned medical waste and the other burned pathogenic waste. These incinerators were installed in 1964. The modifications were permitted by PTI #93-71I. They were equipped with common secondary combustion chamber. In pathogenic incinerator human body

parts such as gal bladder, limbs, legs, arms, kidneys were burned. Air Quality Division has not received any complaint for several years indicating that the incinerator was not operated. Mr. Richard Rutherford, Director, Physical Plant Maintenance, wrote a letter dated December 11, 1998 to AQD that the hospital was permanently shutting down the two incinerators with a common afterburner. Per my instructions of May 1, 2001, when I performed my previous inspection, incinerators were sealed, gas supply was disconnected, electrical supply was terminated and the notice has been posted that incinerators were shutdown. My observations indicated that the incinerators could not be restarted without substantial reconstruction. On March 08, 2005, Mr. Michael Budnick stated that the incinerators were welded shut. On June 4, 2008, I confirmed that steel plates (6 inches * 6 inches) were installed and welded so that the doors for the two incinerators could not be opened. In addition, I verified that all utilities such as natural gas and electricity were disconnected.

The hospital is not subject to 40 CFR, Part 60, Subpart Ce, Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste because the two incinerators now are shut down permanently.

The PTI No. 17-18 (ROP SM) Emission Units

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUBOILER4	Natural gas and No. 2 fuel oil fired 25.1 MMBTU/hr heat input boiler.	10/29/1985	NA
<p>Boiler #4: Cleaver Brooks CB Package Boiler CB-200-600-150, 25 million BTU per hour, 179.5 gallons of No. 2 fuel oil per hour, 600 hp, 150 psi steam (installed in 1987 & operating). Serial No. L80233. PTI No. 168-02 incorporated into ROP SM PTI No. 17-18. Boiler No. 4 is not subject to NSPS Dc (installed in 1987, before June 9, 1989). PTI No. 168-02 incorrectly referred to it as Boiler No. 1.</p> <p>The May 4, 2001, letter of violation (LOV) of Rule 336.1201: Pursuant to Rule 336.1282(b) then (now Rule 336.1282(2)(b)(i)), the boilers burning sweet natural gas (up to 50 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install). In addition, Pursuant to Rule 336.1282(b) then (now Rule 336.1282(2)(b)(ii)), the fuel oil fired boilers (up to 20 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install) subject to the condition that fuel oil (limited to No.1 and No.2) burnt has sulfur content no greater than 0.40 percent by mass. It may be noted that NSPS Dc allows sulfur content up to 0.50 percent sulfur by mass (0.5 pounds of sulfur dioxide per million BTU heat input). Boiler No. 4 has a design capacity of 25 (>20) million BTU heat input per hour. Therefore, Boiler No. 4 was installed in violation of Rule 201.</p>			
EUBOILER1A		8/30/2004	FGBOILER1A&B

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
	Cleaver-Brooks 24.949 MMBTU/hr natural gas fired boiler with No. 2 fuel oil backup.		
<p>Boiler No. 1A was also referred to as Boiler No. 7. Cleaver Brooks CB Package Boiler CB-200-600-150, 25 million BTU per hour, 179.5 gallons of No. 2 fuel oil per hour, 600 hp, 150 psi steam (installed July 2004 & operating). Serial No. OL103403. PTI No. 77-04 was incorporated into ROP SM PTI No. 17-18.</p>			
EUBOILER1B	Cleaver-Brooks 24.949 MMBTU/hr natural gas fired boiler with No. 2 fuel oil backup.	8/30/2004	FGBOILER1A&B
<p>Boiler No. 1B was also referred to as Boiler No. 8 or 2A. Cleaver Brooks CB Package Boiler CB-200-600-150, 25 million BTU per hour, 179.5 gallons of No. 2 fuel oil per hour, 600 hp, 150 psi steam (installed October 2004 & operating). Serial No. OL103404. PTI No. 77-04 was incorporated into ROP SM PTI No. 17-18.</p>			
<p>About 2004, two new boilers (known as Nos. 7/1A & 8/2A/1B) replaced Boiler Nos. 1 through 3. As a matter of fact, new boilers (Nos. 7 & 8) are installed in the space made available by dismantling old (Nos. 1 thru 3 and not No. 4) boilers. All boilers using predominantly natural gas produce steam (150 psi) for space heating. Boiler Nos. 1A & 1B (not No. 4) are subject to federal New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc) as the boilers were installed in CY 2004 (after June 9, 1989); Boiler No. 4 was installed in 1987(before June 9, 1989). All boilers are fire tube boilers (hot gases pass through tubes). All boilers burn 15 ppm sulfur (S) ultra-low sulfur diesel (15 ppm S ULSD) as a back-up fuel. All boilers burn predominantly pipeline quality sweet natural gas. Once a year, all boilers are test fired using ULSD diesel fuel (15 ppm S) to ensure reliability; propane is used to start fire. In-patient (greater than 24 hours, not out-patient) hospitals are required to equip boilers used for space heating with back-up fuel capability with a high degree of reliability. AQD received the letter dated March 17, 2004, from Mr. Steve Henning regarding decommissioning of the Boiler Nos. 1, 2, & 3 (each 12.5 MM BTU per hour. Cleaver Brooks CB Package Boiler). Upon completion of installation of Boiler Nos. 7/1A & 8/2A/1B, each boiler, including Boiler No. 4, is equipped with meters for natural gas and fuel oil. Natural gas meter reading is in one thousand standard cubic feet. The boilers (Nos. 7/1A & 8/2A/1B and not 4) are subject to federal New Source Performance Standards (NSPS Dc) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc). Hence, pursuant to Act 451 of 1994, as amended, § 324.5522 (2)(b), Beaumont is subject to Category D air quality fees. In addition, pursuant to Rule 336.1282((2)b)(i), the boilers burning sweet natural gas (up to 50 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install). Furthermore, pursuant to Rule 336.1282(2)(b)(ii), the fuel oil fired boilers (up to 20 million BTU per hour) are exempt from Rule 336.1201 (Permit-to-Install) subject to the condition that fuel oil (limited to No.1 and No.2) burnt has sulfur content no greater than 0.40 percent by mass. It may be noted that NSPS Dc allows sulfur content up to 0.50 percent sulfur by mass (0.5 pounds of sulfur dioxide per million BTU heat input). However, for the reasons of storage efficiency and operational convenience, Beaumont burns only ULSD (15 ppm Sulfur) in the boilers.</p> <p>Because each boiler (Nos. 7 & 8: 25 MM BTU / hour, each boiler; fuel oil backup) has design capacity over 20 million BTU per hour, two identical boilers are NOT exempt, pursuant to Rule 336.282(2)(b)(ii), from Rule 336.1201 (Permit-to-Install).</p>			
<p>All boilers burn principally sweet pipeline quality natural gas for space heating purposes. ULSD (< 15 ppm S) diesel is used as a backup fuel as required by the hospital licensing regulations.</p>			

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
<p>Of the original four (4) natural gas fired boilers, Botsford has removed three (3) boilers (Nos. 1, 2 & 3) in May 2004, (per letter dated Mach 17, 2004, and March 8, 2005, inspection) and installed two new boilers (known as Nos. 7/1A & 8/2A/1B).</p>			
EU-EG4	A 1,000 kilowatts (kW) diesel-fueled emergency engine manufactured in 2012.	4/20/2012	NA
<p>EG4 Caterpillar Diesel Generator (1250 kVA; 1,000 kilowatt [kW] or 1 megawatt [MW]). Caterpillar Model C32 Engine (2012) with SR5 Generator. Serial No. PRH02481. Generator Model: SR3, Serial # G2H00064. The generator was originally covered by PTI No. 50-12 and is subject to NSPS 4l and NESHAP / RICE MACT 4Z. Rain protection sleeve with vertical discharge of 7705 cfm at 890 °F. The generator is expected to operate less than 500 hours per year, including 100 hours for maintenance and testing. The unit has EPA emissions certification. Installed in 2012. The EG4 Caterpillar engine is certified by US EPA for Engine Family CCPXL32.0NZS and Model Year 2012. Hence, no testing is necessary.</p>			
EU-EG5	A 1,500-kW emergency generator powered by a diesel-fueled 2,220 BHP (15.0 MMBTU/hr) engine manufactured in 2016.	August 11, 2017	FG-EG1
EU-EG6	A 1,500-kW emergency generator powered by a diesel-fueled 2,220 BHP (15.0 MMBTU/hr) engine manufactured in 2016.	August 11, 2017	FG-EG1
<p>EU-EG5 & EU-EG6 are located in Central Energy Plant (CEP)</p> <p>EG5: CEP 1 Gen Make: Cummins 1500 kW or 1.5 MW, Gen Model Number: 1500DQGAF, Gen Serial Number: X17A012712, Engine Make: Cummins, Engine Model Number: QSK 50-G5, Engine Serial Number: 25422951</p> <p>EG6: CEP 2 Gen Make: Cummins 1500 kW or 1.5 MW, Gen Model Number: 1500DQGAF, Gen Serial Number: X17A025708, Engine Make: Cummins, Engine Model Number: QSK 50-G5, Engine Serial Number: 25422953</p> <p>Both engines (EU-EG5 & EU-EG6) are certified by US EPA - Engine Family HCEXL050.AAD, Effective Date: 11/15/2016 Expiration Date:12/31/201, Emissions Power Category: 560<kW<=2237</p>			
EU-EGEAST	A 1,000-kW emergency generator powered by a diesel-fueled 1,482 BHP (10.4 MMBTU/hr) engine manufactured in 1992.	May, 1992	FG-EG1992

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU-EGEAST removed in 2020. East Caterpillar Diesel Generator (1250 kVA; 1,000 kilowatt [kW] or 1 megawatt [MW]). Model No. 3512DITA. Serial No. 24Z04731. Installed in 1993.			
EU-EGWEST	A 1,000-kW emergency generator powered by a diesel-fueled 1,482 BHP (10.4 MMBTU/hr) engine manufactured in 1992.	October, 1992	FG-EG1992
EU-EGWEST: West Caterpillar Diesel Generator (1250 kVA; 1,000 kilowatt [kW] or 1 megawatt [MW]). Model No. 3512DITA. Serial No. 24Z04488. Installed in 1991. Not subject to NSPS 4I.			
However, Beaumont burns only ULSD (< 15 ppm S) diesel only, as a backup fuel as required by the hospital licensing regulations, in all boilers and generators. All boilers and IC engines are fired with ULSD for testing purposes only unless there is a genuine emergency to supply (natural gas and electric power) interruption.			
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

Area Boiler MACT 6J

As the boilers are designed to be capable of burning liquid fuels such as fuel oil, Botsford's boilers are subject to: 40 CFR Part 63, Subpart JJJJJJ (6J) National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers, Page 15554, Federal Register / Vol. 76, No. 54 / Monday, March 21, 2011 / Rules and Regulations / Final rule. This NESHAP / MACT 6J rule does NOT apply to boilers that burn only gaseous fuels or any solid waste; the Botsford's boilers are designed for liquid fuels, such as fuel oil, as well.

AQD has decided not to take delegation of these standards and therefore no attempt has been made to evaluate Botsford's compliance with NESHAP / MACT 6J.

The final rule sets different requirements for boilers based on their size, which is defined as follows:

- Large area source boilers have a heat input capacity equal to or greater than 10 million British thermal units (Btu) per hour (MMBtu/hr).

- Small area source boilers have a heat input capacity less than 10 MMBtu/hr.

Botsford has three large area source MACT 6J natural gas fired boilers (with fuel oil back-up) based upon design capacity (three 25 MM BTU / hour, each boiler). An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010. Hence, Botsford's boilers are existing boilers concerning the NESHAP / MACT 6J (installed in 1987 & 2004). Existing area source boilers (biomass and oil) are required comply with the following:

1. Tune-up every other year (biennial)
2. No numeric emission limits

A gas-fired boiler that periodically fires liquid fuels during gas curtailment and supply emergencies or for periodic (not to exceed a total of 48 hours during any calendar year) testing is still considered a gas-fired boiler. Botsford's boilers may be considered gas fired if records that prove 48-hour-limit are kept. In that case (< 48 hours), the NESHAP / MACT 6J rule does NOT apply to boilers that burn only gaseous fuels or any solid waste (solid waste rules apply).

The following notification requirements may apply:

1. Initial Notification: no later than September 17, 2011
2. Notification of Compliance Status subject to tune-ups: No later than July 19, 2012

Botsford was subject to 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Federal Register / Vol. 69, No. 176 / Monday, September 13, 2004 / Page 55218 / Rules and Regulations). However, on June 8, 2007, US Court of Appeals had mandated that EPA vacate the Boiler MACT Rule in its entirety; in the interim period, 112(j) MACT permit was required. US EPA re-promulgated the Area Source Boiler MACT as NESHAP / MACT 6J. Before the June 8, 2007, vacation, Boiler NESHAP / MACT 5D covered both Area and Major NESHAP sources. Upon the re-promulgation, while Boiler NESHAP / MACT 5D covers Major NESHAP sources, Boiler NESHAP / MACT 6J covers Area NESHAP sources.

PTI No.17-18 Compliance**PTI No.17-18, EU-BOILER4**

Natural gas and No. 2 fuel oil (currently only ULSD as backup) fired 25.1 MM BTUs per hour heat input boiler (Cleaver Brooks CB Package Boiler CB-200-600hp-150).

ULSD is used for testing purposes only (PTI No.17-18, EU-BOILER4, II.1 limit: 208,154 gallons per year).

CY 2019: Beaumont used 7,894 SCF = 7.894 M SCF of natural gas in Boiler No. 4 and 0 gallons of ULSD. Corresponding NOx emissions for all boilers and engines = 8.51 tons per calendar year. The NOx emissions include 315 gallons of ULSD use in the engines. 17.61 MM SCF per year natural usage in all boilers.

CY 2020: Beaumont used 9,278 SCF = 9.278 M SCF of natural gas in Boiler No. 4 and 0 gallons of ULSD. Corresponding NOx emissions for all boilers and engines = 6.78 tons per calendar year. The NOx emissions include 474 gallons of ULSD use in the engines. 10.73 MM SCF per year natural usage in all boilers.

CY 2021: Beaumont used 8,768 SCF = 8.768 M SCF of natural gas in Boiler No. 4 and 0 gallons of ULSD. Corresponding NOx emissions for all boilers and engines = 6.82 tons per calendar year. The NOx emissions include 539 gallons of ULSD use in the engines. 9.06 MM SCF per year natural usage in all boilers.

The NOx emissions calculations are performed as shown above. Although CY emissions are shown 12-month rolling calculations are performed.

PTI No.17-18, EU-EG4

Previously covered by PTI No. 50-12. The engine is subject to NSPS 4I and NESHAP / RICE MACT 4Z. Rain protection sleeve with vertical discharge of 7705 cfm at 890 °F. The Caterpillar engine is certified by US EPA for Engine Family CCPXL32.0NZS and Model Year 2012.

A 1,000 kilowatts (kW) diesel-fueled emergency engine manufactured in 2012. Caterpillar Diesel Generator (1250 kVA; 1,000 kilowatt [kW] or 1 megawatt [MW]). Caterpillar Model C32 Engine (2012) with SR5 Generator. Serial No. PRH02481. Generator Model: SR3, Serial # G2H00064

Beaumont uses only ULSD (< 15 ppm (0.0015 percent) S). Beaumont submitted RKA Petroleum receipt for No. 2 Dyed Premium ULS Diesel (Invoice No. 026631 dated 03/10/2021 for \$4,125.38) (PTI No.17-18, EU-EG4, II.1, VI.5: only ULSD 15 ppm S, fuel cert).

Based upon non-resettable hours meter, Beaumont noted the readings (hours): 277 (12/01/18), 279.6 (01/04/19), 312 (12/15/19), 315.7 (01/09/20), 336 (07/09/20), 381 (10/08/21) (PTI No.17-18, EU-EG4, III.1: < 500 hrs / yr, IV.1: equip with non-resettable hours meters)

PTI No. 17-18 Flexible Groups:

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGBOILER1A&B	Two Cleaver-Brooks 24.949 MMBTU/hr (each) natural gas-fired boilers with No. 2 fuel oil backup. These boilers are subject to NSPS Dc.	EUBOILER1A, EUBOILER1B
FG-EG1	Two emergency generators powered by diesel fueled engines. These engines are subject to the engine NSPS and NESHAP.	EU-EG5, EU-EG6
FG-EG1992	Two emergency generators powered by diesel fueled engines. These engines are not subject to the engine NSPS or NESHAP.	EU-EGEAST, EU-EGWEST
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	

PTI No. 17-18, FGBOILER1A&B (EUBOILER1A, EUBOILER1B)

Two Cleaver-Brooks 24.949 MMBTU/hr (each) natural gas-fired boilers with No. 2 fuel oil backup. These boilers are subject to NSPS Dc.

Natural gas usage is as follows:

1. CY 2019, M SCF/Year: 38.376 Boiler 7/1A and 46.959 Boiler 8/2A/1B
2. CY 2020, M SCF/Year: 40.769 Boiler 7/1A and 38.330 Boiler 8/2A/1B
3. CY 2021, M SCF/Year: 37.226 Boiler 7/1A and 43.565 Boiler 8/2A/1B

ULSD is used for testing purposes only.

(PTI No. 17-18, FGBOILER1A&B, II.1 & 2 limits: 175,000 gallons of distillate oil and 430 million standard cubic feet of natural gas, 1 SCF NG = 1,000 BTU)

The required emissions calculations are performed (PTI No. 17-18, FGBOILER1A&B, VI.1: the calculations)

PTI No. 17-18, FG-EG1 (EU-EG5, EU-EG6)

Two emergency generators powered by diesel fueled engines. These engines are subject to the engine NSPS 4I and NESHAP / MACT 4Z.

EU-EG5	A 1,500-kW emergency generator powered by a diesel-fueled 2,220 BHP (15.0 MMBTU/hr) engine manufactured in 2016.	August 11, 2017	FG-EG1
EU-EG6	A 1,500-kW emergency generator powered by a diesel-fueled 2,220 BHP (15.0 MMBTU/hr) engine manufactured in 2016.	August 11, 2017	FG-EG1
EU-EG5 & EU-EG6 are located in Central Energy Plant (CEP)			

Beaumont uses only ULSD (< 15 ppm (0.0015 percent) S). Beaumont submitted RKA Petroleum receipt for No. 2 Dyed Premium ULS Diesel (Invoice No. 026631 dated 03/10/2021 for \$4,125.38) (PTI No.17-18, FG-EG1, II.1 : only ULSD 15 ppm S, fuel cert).

1. **EG5/CEP1:** Based upon non-resettable hours meter, Beaumont noted the readings (hours) for EG5/CEP1: 30.1 (12/05/18), 34.3 (2/08/19), 67.6 (10/10/19), 99 (04/02/20), 125.3 (11/05/20), 180 (11/19/21)
2. **EG6/CEP2:** Based upon non-resettable hours meter, Beaumont noted the readings (hours) for EG6/CEP2: 28 (01/02/19), 58 (10/10/19), 80.3 (03/05/20), 114 (11/15/20), 173 (12/17/21)

Monthly testing and maintenance is performed for the certified NSPS 4I engines. (PTI No.17-18, FG-EG1, III.1-3: < 500 hrs / yr, certified engines, maintenance; IV.1: equip with non-resettable hours meters)

PTI No. 17-18, FG-EG1992 (EU-EGEAST, EU-EGWEST)

Two emergency generators powered by diesel fueled engines. These engines are not subject to the engine NSPS 4I as they were installed in 1992 < 2006

EU-EGEAST has been removed in 2020.

Beaumont uses only ULSD (< 15 ppm (0.0015 percent) S). Beaumont submitted RKA Petroleum receipt for No. 2 Dyed Premium ULS Diesel (Invoice No. 026631 dated 03/10/2021 for \$4,125.38) (PTI No.17-18, FG-EG1992, II.1: only ULSD 15 ppm S, fuel cert).

Based upon non-resettable hours meter, Beaumont noted the readings (hours) for EU-EGWEST: 1375 (01/04/19), 1379 (02/06/19), 1415 (01/09/20), 1453 (12/03/20), 1492 (12/03/21)

Monthly testing and maintenance is performed for the non-NSPS 4I engines. (PTI No.17-18, FG-EG1992, III.1: < 500 hrs / yr, IV.2: equip with non-resettable hours meters)

PTI No. 17-18, FG-FACILITY

Pollutant	Limit	CY2019	CY2020	CY2021	Comment
1. NO _x	85 tpy	8.51 tpy NO _x Based upon 17.61 MM SCF NG in all boilers and 315 gallons of ULSD in all Em Gen Engines	6.78 tpy NO _x Based upon 10.73 MM SCF NG in all boilers and 474 gallons of ULSD in all Em Gen Engines	6.82 tpy NO _x Based upon 9.06 MM SCF NG in all boilers and 539 gallons of ULSD in all Em Gen Engines	

Beaumont uses only ULSD (< 15 ppm (0.0015 percent) S). Beaumont submitted RKA Petroleum receipt for No. 2 Dyed Premium ULS Diesel (Invoice No. 026631 dated 03/10/2021 for \$4,125.38) (PTI No.17-18, FGFACILITY, II.1: only ULSD 15 ppm S, fuel cert).

Emergency engines are used only for testing purposes unless there is an interruption of power supply (PTI No.17-18, FGFACILITY, III.1: <500 hours per year).

Non-resettable hours meters readings are noted on a monthly basis (PTI No.17-18, FGFACILITY, IV.1: equip with non-resettable hours meters and track hours of operation of each engine).

As noted above the NO_x emissions calculations are performed. Only liquid fuel purchased is ULSD 15 ppm S that is principally used for boilers and generator engines testing based upon the invoices. The hours of operations are noted during the testing for engines. (PTI No.17-18, FGFACILITY, VI.1-4: records).

Based upon MAERS the emissions are as follows (<< 85 tons per year):

CY 2021 RG-BOILERS: 88.4 MM SCF natural gas and 0 gallons of ULSD fired in all boilers with an associated emissions of 4.4 tons of NO_x per year.

CY 2020 RG-EMGENS: 7,000 gallons of ULSD fired in all IC engines with an associated emissions of 2 tons of NOx per year.

Conclusion:

This is a NSPS Dc Cat D fee (Diesel backup boilers) subject source. Natural gas usage records for each boilers are kept upon installation of meters, instrumentation and controls (Siemens). The hospital has no source of odor because it has now shut down the two incinerators: one burned medical waste and the other burned pathogenic waste. Generator engines are operated properly. Boilers only burn natural gas excepting for testing with ULSD. Botsford / Beaumont is in compliance with its ROP Synthetic Minor permit principally boilers and CI RICE emergency generators (actual 6 tpy << 85 tpy NOx).

NAME J. S. Marshall

DATE June 15, 2022

SUPERVISOR Joyce