

January 13, 2021

Zane Greear
Fresenius Medical Care
100 Galleria Pkwy., Suite 500
Atlanta, GA 30339

Subject: Notification of Emergency Generator Installation – Fresenius Medical Care –
Vancouver No. 4686 (SUN – 254)

Dear Mr. Greear:

The Southwest Clean Air Agency (SWCAA) received your Small Unit Notification (SUN) on January 11, 2021 for installation and operation of an emergency generator engine at the Fresenius Medical Care facility at 13118 NE 4th Street, Vancouver, WA. For administrative and tracking purposes SWCAA has assigned tracking number SUN-254 to this notification. This notification was filed in accordance with SWCAA 400-072 and applies to the installation of one emergency generator engine. The new unit was identified as:

463 bhp diesel-fired John Deere model 6090HFG86A engine to drive a 300 kW Kohler generator set. The engine is EPA Tier 3 certified and meets the standards for stationary emergency engines.

SWCAA has completed a review of your notification and the associated support information and has determined that the notification meets the requirements of SWCAA 400-072(2). Once installed, affected equipment must maintain compliance with the requirements of SWCAA 400-072(5)(c) "**Emergency service internal combustion engines.**" A copy of the relevant SWCAA 400-072 section is attached for your information.

Be advised that emission units installed pursuant to SWCAA 400-072 are subject to source registration and periodic inspection. Registration fees for this equipment will be invoiced consistent with SWCAA 400-100.

If you need further assistance or have any questions regarding these matters, please contact me at (360) 574-3058 extension 130.

Sincerely,



Paul T. Mairose
Chief Engineer



SWCAA 400-072 Emission Standards for Selected Small Source Categories

[Statutory Authority: Chapter 70.94.141 RCW. Original adoption 09-21-056 filed 10/15/09, effective 11/15/09, 16-19-009 filed 9/8/16, effective 10/9/16; 17-11-078 filed 5/18/17, effective 6/18/17; 20-06-003 filed 2/19/20, effective 3/21/20]

(5) Source categories.

(c) Emergency service internal combustion engines.

- (i) **Applicability.** The provisions of this section apply to emergency service internal combustion engines with a rating of 50 or more, but less than 1,000 horsepower (e.g., emergency generators, fire pumps, sewer lift stations, etc.).
- (ii) **Emission limits and standards.**
 - (A) Visible emissions from diesel fired engine exhaust stacks shall not exceed ten percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See SWCAA 400, Appendix A). This limitation shall not apply during periods of cold start-up.
- (iii) **General requirements.**
 - (A) Liquid fueled engines shall only be fired on #2 diesel or biodiesel. Fuel sulfur content of liquid fuels shall not exceed 0.0015% by weight (15 ppmw). A fuel certification from the fuel supplier may be used to demonstrate compliance with this requirement.
 - (B) Gaseous fueled engines shall only be fired on natural gas or propane.
 - (C) Each compression ignition engine shall be EPA Tier certified and manufactured no earlier than January 1, 2008.
 - (D) Engine operation shall be limited to maintenance checks, readiness testing, and actual emergency use.
 - (E) Engine operation for maintenance checks and readiness testing shall not exceed 100 hours per year. Actual emergency use is unrestricted.
 - (F) Each engine shall be equipped with a nonresettable hourmeter for the purpose of documenting hours of operation.
 - (G) Engine exhaust shall be discharged vertically. Any device that obstructs or prevents vertical discharge is prohibited.
- (iv) **Monitoring and recordkeeping requirements.** The information listed below shall be recorded at the specified intervals and maintained in a readily accessible form for a minimum of 3 years. With the exception of data logged by a computerized data acquisition system, each required record shall include the date and the name of the person making the record entry.
 - (A) Total hours of operation for each engine shall be recorded annually;
 - (B) Hours of emergency use for each engine shall be recorded annually;
 - (C) Fuel sulfur certifications shall be recorded for each shipment of liquid fuel;
 - (D) Maintenance activities shall be recorded for each occurrence consistent with the provisions of 40 CFR 60.4214;
 - (E) Upset conditions that cause excess emissions shall be recorded for each occurrence; and
 - (F) All air quality related complaints received by the permittee and the results of any subsequent investigation or corrective action shall be recorded promptly after each occurrence.
- (v) **Testing requirements.** None.

(vi) **Reporting requirements.**

- (A) The owner or operator of an affected emission unit shall provide written notification of initial operation to SWCAA within 10 days of occurrence.
- (B) All air quality related complaints received by the owner or operator shall be reported to SWCAA within three calendar days of receipt.
- (C) The owner or operator of an affected emergency engine shall report the following information to the Agency no later than March 15th for the preceding calendar year:
 - (I) Hours of engine operation; and
 - (II) Air emissions of criteria air pollutants, VOCs, and toxic air pollutants (TAPs).

**Summary Information (by SWCAA) for SUN-254
Fresenius Medical Care – Vancouver No. 4686
Emergency Generator Engine**

A 300 kW diesel-fired emergency generator set will be installed at the Fresenius Medical Care Facility – Vancouver No. 4686 facility. The following equipment details were available:

Location:	13118 NE 4 th Street Vancouver, WA 98684 Outside northwest corner of the building
Engine Make / Model:	John Deere / 6090HFG86A
Engine Serial Number:	RG6090L141237
Fuel:	Diesel
Fuel Consumption:	22.2 gallons per hour at 100% power rating
Engine Power Rating:	345 kW / 463 bhp (as per generator specification sheet)
Installation Date:	Scheduled for January 31, 2021
Engine Built (Date):	July 27, 2020
Engine Certification:	EPA Tier 3
Generator Set Make / Model:	Kohler / 300REOZJ
Generator Set Output:	300 kW (standby)
Stack Description:	4.5" diameter, exhausting ~9' 2" above grade. Stack flow 2,246 acfm at 927°F ~ 45°37'27.37"N, 122°32'16.32"W
Applicable Federal Regulations:	40 CFR 60 Subpart IIII 40 CFR 63 Subpart ZZZZ

Emergency Generator Engine. Potential annual emissions from the combustion of ultra-low sulfur diesel (<0.0015% sulfur by weight) were calculated with the assumption that the equipment will operate at full load for up to 200 hours per year.

Fresenius Medical Care - Vancouver No. 4686 Emergency Generator Engine						
Hours of Operation =	200 hours					
Power Output =	345.0 kW					
Diesel Density =	7.206 pounds per gallon					
Fuel Sulfur Content =	0.0015 % by weight					
Fuel Consumption Rate =	22.2 gal/hr (from Kohler data sheet)					
Fuel Heat Content =	0.138 MMBtu/gal (for use with GHG factors from 40 CFR 98)					
	Emission Factor	Emissions	Emissions			
Pollutant	g/(kW-hr)	lb/hr	tpy	Emission Factor Source		
NO _x	3.80	2.89	0.289	Kohler - EPA Certificate Data		
CO	0.90	0.68	0.068	Kohler - EPA Certificate Data		
VOC	0.05	0.038	0.0038	Kohler - EPA Certificate Data		
SO _x as SO ₂		0.0048	0.00048	Mass Balance		
PM	0.11	0.084	0.0084	Kohler - EPA Certificate Data		
PM ₁₀	0.11	0.084	0.0084	Kohler - EPA Certificate Data		
PM _{2.5}	0.11	0.084	0.0084	Kohler - EPA Certificate Data		
				CO ₂ e	CO ₂ e	Emission Factor
Greenhouse Gases	kg/MMBtu	GWP	lb/MMBtu	lb/gallon	tpy, CO ₂ e	Source
CO ₂	73.96	1	163.054	22.501	49.9532	40 CFR 98
CH ₄	0.003	25	0.165	0.023	0.0507	40 CFR 98
N ₂ O	0.0006	298	0.394	0.054	0.1208	40 CFR 98
Total GHG - CO ₂ e			163.613	22.579	50.1246	

* Note that the EPA Annual Certification Data spreadsheet values for VOC and PM are 0.09 g/kW-hr and 0.14 g/kW-hr respectively. This differs slightly from the emission data sheet published by Kohler and used above.