

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

N662259016

FACILITY: Detroit Water & Sewerage, West Service Station		SRN / ID: N6622
LOCATION: 20920 East Street, SOUTHFIELD		DISTRICT: Warren
CITY: SOUTHFIELD		COUNTY: OAKLAND
CONTACT:		ACTIVITY DATE: 06/17/2021
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 2021 inspection (off-site) of Great Lakes Water Authority - West Service Center ("GLWA"), located at 20920 East Street, Southfield, Michigan 48075.		
RESOLVED COMPLAINTS:		

Great Lakes Water Authority (GLWA) (N6622)
20920 East Street
Southfield, Michigan 48075

Active PTI: Permit-to-Install No. 230-99B dated December 1, 2008, issued to Detroit Water and Sewerage Department (DWSD) - West Service Center (Southfield) for two emergency power or peak shaving generators (Caterpillar Modell No. 3516B).

Name change (2014): Detroit Water and Sewerage Department (DWSD) (N6622) → Great Lakes Water Authority (GLWA) (N6622). GLWA was created upon Detroit's municipal bankruptcy (Chapter 9 bankruptcy Case No. 13-53846 filed on July 18, 2013) under Michigan Municipal Emergency Law.

PTI Voids: PTI Nos. 230-99 (Received: 06/18/1999; Approved: 07/14/1999; Voided: 08/20/2002) and 230-99A (Received: 05/22/2002; Approved: 08/20/2002; Voided: 12/01/2008).

Emergency generators (2) are subject to Area Source NESHAP / MACT ZZZZ or 4Z, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines / Final rule (Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final rule.).

On June 17, 2021, I conducted a level-2 self-initiated **FY 2021 inspection (off-site)** of Great Lakes Water Authority - West Service Center ("GLWA"), located at 20920 East Street, Southfield, Michigan 48075. The inspection was conducted to determine compliance with the 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 PTI No. 230-99B dated December 1, 2008.

During the FY19 on-site inspection, Mr. Satwindar Sing (Cell: 313-300-3652; Fax: NA; E-mail: NA), EACT (Electrician), assisted me. Also, during the FY 21 remote inspection, Mr. Thomas C. Hall (Cell: 313-999-1455; Fax: NA; E-mail: Thomas.Hall@glwater.org), TEAM LEAD - Field Services, assisted me via phone and e-mail.

GLWA assumed the operations of DWSD under 40-year lease deal approved on June 12, 2015. GLWA provides water and sewer services to four (≈ 4) million customers in Southeast Michigan (Wayne, Oakland and Macomb counties, 125 communities). GLWA operates freshwater booster station at Southfield, one of many including Franklin booster station (N7515). For emergency power, GLWA depends upon two Caterpillar Model No. 3516B engines that power generators.

PTI No. 230-99B Emission Units

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUENGINE1	A Mod. 3516B diesel fuel-fired reciprocating engine generator with a nameplate capacity of 1,825 KW (1.8 MW) and a heat input of 18.31 MM BTU per hour	1999	FGENGINES
Caterpillar Engine Model No. 3516B & Serial No.7RN0087			
Caterpillar Generator Model No. 269490000 & Serial No.13668-17			
Hours meter reading: 438 (08/01/2019), 457 (05/24/21)			
2281 kVA, 274 Amps & 4800 Volts			
EUENGINE2	A Mod. 3516B diesel fuel-fired reciprocating engine generator with a nameplate capacity of 1,825 KW (1.8 MW) and a heat input of 18.31 MM BTU per hour	1999	FGENGINES
Caterpillar Engine Model No. 3516B & Serial No.7RN0088			
Caterpillar Generator Model No. 269490000 & Serial No.13668-16			
Hours meter reading: 408 (08/01/2019), 425 (05/28/21)			
2281 kVA, 274 Amps & 4800 Volts			
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.			

PTI No. 230-99B Flexible Group

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGENGINES	Two diesel fired engine generators for emergency power or peak shaving.	EUENGINE1, EUENGINE2

Only fuel burned is Ultra Low Sulfur Diesel (dyed15 ppm S ULSD) (PTI No. 230-99B, FGENGINES, II.1 limit: 0.05% S Diesel). Generators have been operated only for testing purposes and never for peak shaving (PTI No. 230-99B, FGENGINES, II.2 limit:328,333 gallons of 500 ppm LSD per year). CY 2020 usage is **1,399** (Engine1 with 11 hours of operation) PLUS **1,157** (Engine2 with 9 hours of operation) = **2,556** (total for both engines) gallons of ULSD per year.

GLWA keeps records of fuel usage, NOx emissions, sulfur content (ULSD), hours meter readings, etc. (PTI No. 230-99B, FGEngines, IV.1 & VI.1-3: fuel usage for each engine, NOx emission calculations, diesel sulfur content [only dyed15 ppm S ULSD]).

CY20 annual emissions: **296** pounds of CO and **622** pounds of NOx.

RICE MACT 4Z

Emergency generators (2) are subject to Area Source NESHAP / MACT ZZZZ or 4 Z, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines / Final rule (Page 6674 Federal Register / Vol. 78, No. 20 / Wednesday, January 30, 2013 / Rules and Regulations / Final rule.).

RICE MACT 4Z requirements may be summarized as:

1. Change oil and filter: every 500 hours of operation or annually whichever occurs first.
2. Inspect air cleaner: every 1,000 hours of operation or annually whichever occurs first.
3. Inspect all hoses: every 500 hours of operation or annually whichever occurs first.
4. Operate / maintain engine and control devices according to manufacturer's recommendation
5. Install non-resettable hours meter and maintain records
6. Keep maintenance records
7. NSPS Notification not required

Emergency engines:

1. 100 hours per year for maintenance checks and readiness testing
2. 50 hours per year for non-emergency (non-income generating)

3. No hours limit for genuine emergency

A contractor performs semi-annual maintenance, which includes inspection of installation (vibration, structural integrity, etc.), cooling system (radiator / heat exchanger, belts, hoses, antifreeze, etc.) starting system, lubrication system (sample oil and change if necessary, etc.) control panels and generator, fuel system, exhaust system, etc. Replace fuel filters, oil filters, lubricating oil filters, coolant filters, if necessary and dispose of waste oil and filters properly.

While peak shaving is allowed in Southfield (PTI No. 230-99B, B6622), it is NOT allowed in Franklin (PTI No. 215-05, N7515). However, neither freshwater booster station performs peak shaving. Starting from 2015, emergency engines would be required to use cleaner fuel - ultra low sulfur diesel (ULSD) - if they operate, or commit to operate, for more than 15 hours annually as part of blackout and brownout prevention, also known as emergency demand response.

Conclusion

GLWA is in compliance with PTI No. 230-99B.

NAME

L S Mcninchall

DATE JULY 23, 2021

SUPERVISOR

Joyce