

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

N315465108

FACILITY: BATTLE CREEK AIR NATIONAL GUARD		SRN / ID: N3154
LOCATION: 3367 W DICKMAN, BATTLE CREEK		DISTRICT: Kalamazoo
CITY: BATTLE CREEK		COUNTY: CALHOUN
CONTACT: Jeremiah Johnson , Senior Environmental Quality Analyst		ACTIVITY DATE: 10/06/2022
STAFF: Amanda Cross	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On October 6, 2022, Air Quality Division’s (AQD) Amanda Cross (staff), arrived at the Battle Creek Air National Guard Base (BCANG), located at 3367 W. Dickman Road, Battle Creek, Calhoun County Michigan to complete an announced air quality inspection. The inspection was announced since it’s BCANG policy that all non-military personnel must be accompanied at all times, while on base. The purpose of the inspection was to verify the facility’s compliance with all applicable state and federal air quality regulations.

The last inspection at the facility was completed on June 30, 2009. At the time of the inspection, the facility was determined to be in non-compliance. The facility runs utilizing exemptions. Staff arrived on site and was met at the contractor gate by Mr. Jeremiah Johnson, a civilian who is employed by the State of Michigan and the Guard Base. Staff presented their ID, verified that there were no drugs, alcohol, or weapons in the vehicle, and had to submit to a vehicle search to verify. Staff then followed Mr. Johnson in the vehicle, back to this office to discuss the inspection.

The BCANG used to handle frequent aircraft arrivals and departures at the facility, along with maintenance associated with aircraft. This was phased out in 2011-2012. All associated supporting equipment has been removed, including the paint booth. Only a tank farm with fuel and the hangars remain. There are no planning cells, incinerators, engine test cells or test stands at the facility. Most of the boilers, since the last inspection, have been replaced and no longer have the capability of running on fuel oil. All boilers on site run on natural gas. Emergency generators all run on diesel fuel.

The facility uses R22 refrigerant, which is required to be phased out by 2030. This is mainly used in air conditioning units. According to records, there is 264 pounds left on site. Equipment which uses R22 is being removed and replaced at the facility. The facility is transitioning over to R410A and M099 refrigerant.

Mr. Johnson provided staff with the Final Air Quality Management Plan (AQM Plan) for the Battle Creek Air National Guard Base, prepared by a third party. This covers all the equipment on site subject to air quality regulations. This was updated in July 2021, but covers equipment changes through 2019. Staff toured the facility with Mr. Johnson and observed the various emergency engines and boilers on site, along with the tank farm. The following will describe the activities on site and observations during the inspection.

The AQM plan identifies degreasing/solvent cleaning equipment located in building 6911 which uses Super Agitene 141. Mr. Johnson said this was removed from the facility and it no longer uses anything containing more than 5% VOC to do parts cleaning. The SDS was requested to verify that

no solvent was used on site anymore. An aqueous based parts washer is exempt under Rule 281 (2)(k).

The facility has many external combustion sources, as identified in the AQM Plan. These include boilers, water heaters, and furnaces. The facility included a list of all boilers, heaters, and furnaces on site, as of 2019. Since this list was generated, the facility replaced 13 boilers in November 2021-December 2021. The boilers that were replaced were replaced with smaller, newer, more efficient models. However, since they were installed as one project, staff requested a PTE analysis along with a Rule 278a demonstration that the facility did not exceed criteria pollutant significance levels when installing the boilers and the project did not require a permit.

Individually, all the boilers, water heaters, and furnaces are exempt under Rule 282(2)(b)(i), fuel burning equipment used for space heating, service water heating, or indirect heating which burns natural gas and has a heat input capacity of not more than 50 MMBtu/hr. The following is a list of boilers currently on-site, observed by staff.

Boiler	Size/Fuel	Location	Hours Run Since Last Reboot	Notes
Reillo – AR 1500	1.5 MMBtu/hr Natural Gas	Building 6900	22 Hours	Installed – 12/6/21
Reillo – AR 1500	1.5 MMBtu/hr Natural Gas	Building 6900	22 Hours	Installed – 11/19/21
Weil McLain – EVG 299	0.29 MMBtu/hr Natural Gas	Building 6901	Not Observed	Installed – 11/15/21
Weil McLain – EVG 299	0.29 MMBtu/hr Natural Gas	Building 6901	Not Observed	Installed – 11/15/21
Reillo – AR 1500	1.5 MMBtu/hr Natural Gas	Building 6903	516 Hours	Installed – 11/15/21
Buderus	0.33 MMbtu/hr Natural Gas– Low NOx	Building 6905	Not Available	Installed - 2013

Buderus	0.33 MMBtu/hr Natural Gas- Low NOx	Building 6905	Not Available	Installed - 2013
Weil McLain	0.75 MMBtu/hr Natural Gas- Low NOx	Building 6911	Not Available	Installed - 1/26/22
Weil McLain	0.75 MMBtu/hr Natural Gas- Low NOx	Building 6911	Not Available	Installed - 1/26/22
Lochinvar FTXL	0.725 MMBtu/hr Natural Gas- Low NOx	Building 6913	Not Available	Installed - 2018
--	1 MMBtu/hr Natural Gas- Low NOx	Building 6914		Installed - Unknown
--	1 MMBtu/hr Natural Gas- Low NOx	Building 6914	Not Accessible for Security Reasons	Installed - Unknown
--	1 MMBtu/hr Natural Gas- Low NOx	Building 6914		Installed - Unknown
Reillo - Array 500 SE	0.5 MMBtu/hr Natural Gas	Building 6916	Not Accessible for Security Reasons	Installed - 11/19/21
--	0.8 MMBtu/hr	Building 6917	Not Observed	Installed - Unknown
HTP	0.39 MMBtu/hr Natural Gas- Low NOx	Building 6922	Not Available	Installed - 2010
HTP	0.39 MMBtu/hr Natural Gas- Low NOx	Building 6922	Not Available	Installed - 2010
	0.85 MMBtu/hr	Building 6923	Not Available	Installed - 2010

Cascade Master Boiler 850	Natural Gas			
Cascade Master Boiler 850	0.85 MMBtu/hr Natural Gas	Building 6923	Not Available	Installed - 2010
--	0.5 MMbtu/hr Natural Gas	Building 6930	Not Available	Installed - Unknown
--	0.33 MMBtu/hr Natural Gas– Low NOx	Building 6930	Not Available	Installed - Unknown 8 Identical Boilers
Bryan	0.25 MMBtu/hr Natural Gas	Building 6950	Not Available	Installed – 2000/2001
Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 6954	2685 Hours	Installed 12/22/21
Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 6954	2685 Hours	Installed 12/22/21
Copper Fin II	0.65 MMBtu/hr Natural Gas	Building 6954	Not Available	Installed 2006
Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 7010	2399 Hours	Installed 12/16/21
Riello – Array 399 SE	0.39 MMbtu/hr Natural Gas	Building 7015	24 Hours	Installed 12/10/21
Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 7020	651 Hours	Installed 12/7/21

Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 7020	651 Hours	Installed 12/8/21
Riello – AR 800	0.8 MMbtu/hr Natural Gas	Building 7040	2375 Hours	Installed 12/14/21

According to Maintenance Personnel, the boilers are serviced every 6-months, in house. They are serviced in October and April. An example of the 6-month boiler maintenance checklist was requested.

The facility is also a source of internal combustion engines which includes stationary and portable engines. The facility has 6 portable generators and 9 permanent generators on site. The following is a list of the permanent generators on site. All emergency generators identified during the last inspection that were gasoline powered (40 CFR Part 60 Subpart JJJ) have been removed from site.

Diesel – NSPS IIII if installed after 2005 and not a Fire Pump						
Unit ID #	Building No.	Equipment Name	Engine Year	Power Rating	Running/Not Running	Operating Time hr/yr
681991	6954	Cummins (QSM11-G4-NR3)	2007/03/01	470 bhp	Not Running	625 hours 869 starts
681980	6923	Cummins (QSK23-G7-NR2)	2011/07/20	1200 bhp	Not Running	445.6 hours 829 starts
707558	6900	Kohler (6068HFG82)	2016/07/11	240 bhp	Not Running	200.1 hours
707559	7020	Cummins (QSL9-G2-NR3)	2007/09/19	364 bhp	Not Running	287.6 hours 773 starts
728057	6922	Kohler (6135HFG84)	2019/05/30	617 bhp	Not Running	101.6 hours

--	6905	Kohler	2004/11	--	Not Running	216.2 hours
Subject to 40 CFR Part 63, Subpart ZZZZ						
682032	6911	Onan (4B3.9-G2)	2002/07/03	68 bhp	Not Running	524.5 hours
707557	6914	Cummins/Onan (KTA19-G4)	1997/10/01	755 bhp	Not Running	634.6 hours
730032	0033	Onan (F2803-BG-E)	2007/10/1	50 bhp	Not Running	573.5 hours

The generators have monthly or weekly runs, depending on the generator. These are either 15 minutes, weekly or 1 hour a month. These runs are programmed by base personnel. An oil analysis is completed annually. The annual maintenance includes changing the oil and filter, checking the coolant and lines, and other required maintenance per the federal regulations noted above.

The monthly maintenance checklist was observed on site and records were requested via email. The run hours are logged on the maintenance form as well as a visual check of the generator including the oil filter and cooling lines. Hours are tracked either for emergency use or monthly maintenance runs. The generators appear to be in compliance with 40 CFR Part 63, Subpart IIII or ZZZZ. These are exempt under air quality Rule 336.1285(2)(g) for internal combustion engines below 10 MMBtu/hr maximum heat input.

The previous inspection noted there was a paint booth located in the corrosion control building (6917). This was removed from the site when aircraft and the associated equipment was removed from the facility. The facility uses paint cans with brushes for building exteriors and aerosol cans on site. This is exempt under Rule 336.1287(2)(b).

The previous inspection also noted a distillation unit, exempt under Rule 336.1285(2)(u). This has been removed and is no longer on site.

The facility has one 105,000-gallon jet fuel tank, installed in 1993. A second 105,000-gallon jet fuel tank was dismantled and removed from site in 2020. This is used to store fuel for the occasional small plane or helicopter which arrives on site. This is exempt under air quality Rule 336.1284(2)(d). It is subject to 40 CFR Part 60 Subpart Kb for tanks with a capacity of greater than or equal to 151 cubic meters (39,890) gallons storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals.

The facility installed two, horizontal 25,000-gallon fuel tanks which hold Jet Fuel A, in 2021. There is one 5,000-gallon diesel fuel tank and one 5,000-gallon gasoline fuel tank, both installed in 1996. These are exempt under Rule 336.1284(d) and Rule 336.1284(g)(i), respectively.

The facility has a woodworking area, which is used sparingly. This is controlled by a dust collector and maintained internally. This is exempt under Rule 336.285(2)(l)(vi)(B).

Records that were requested to be submitted, via email are: parts washer SDS, fuel usage and hours records for the generators, examples of the monthly and 6-month boiler maintenance checklists, and a PTE calculation of the boiler installation, completed in 2021.

Records were received on October 14, 2022 and reviewed by AQD staff.

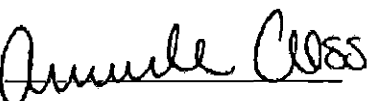
The PTE calculation for the boiler installation project, replacing 15 boilers on site in 2021 was provided. Overall PTE for the new boilers calculated to 2.641 tpy NO_x, 4.439 tpy CO, 0.400 tpy PM (total), 0.32 tpy of SO₂, and 0.290 tpy VOC. Non-criteria pollutant GHG CO₂e was also calculated at 6,306.95 tpy. The total rated heat capacity of all the new boilers combined is less than 15,000,000 BTU/hr. The boilers are exempt from needing to obtain a permit to install and can continue to operate under exemption rule 336.1282(2)(b)(i) for fuel burning equipment, which is used for space heating, service water heating, electric power generation etc. which burns only sweet natural gas...and the equipment has a rated heat input capacity of not more than 50,000,000 BTU/hour.

The SDS for SW-3 OzzyJuice Truck Grade Degreasing Solution was provided for review. The degreasing solution is 90-100% water, 1-3% surfactant blend, and 1-3% tetrapotassium pyrophosphate and is not considered a solvent. It is exempt under Rule 281(2)(k) for an aqueous based parts washer.

A 1-month sample of the stationary generator inspection records were provided for September 2022 which includes hours of operation and fuel usage for review. Each checklist has the location, start hours, ending hours, the time, temperature outside, and name of the person who completed the check are included in the record. Other things included are general generator conditions, cooling system, fuel system and level, load demand, lubrication system, battery and charging system, and if maintenance is required. The generator by building 6923 used the most fuel at 30.5 gallons for the month.

Finally, a 6-month sample of boiler maintenance records were provided for March-August 2022. The 6-month maintenance checks include location of the boiler, heat input rating, and date of service. The checklist includes checking the venting system joints and connections, water connections, flame, inspect flue/gas passageways, air fan, and water circulation pump, clean the area, and ensure proper communication with internal system.

Based on the on-site inspection and records provided for review, the facility appears to be in compliance with all applicable state and federal air quality regulations.

NAME  DATE 10/19/22 SUPERVISOR RIL 10/20/22