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

N803559348

FACILITY: CAPITAL REGION AIRPORT AUTHORITY		**SRN / ID:** N8035
LOCATION: 3170 WEST STATE RD, LANSING		**DISTRICT:** Lansing
CITY: LANSING		**COUNTY:** CLINTON
CONTACT: Ron O'Neil , Director of Maintenance		**ACTIVITY DATE:** 07/21/2021
STAFF: Julie Brunner	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: On July 20 – 21, 2021, a scheduled inspection was conducted and observation of a stack test of the international waste incinerator at the Capital Regional Airport Authority (CRAA)		
RESOLVED COMPLAINTS:		

On July 20 – 21, 2021, I conducted a scheduled inspection and observed a stack test of the international waste incinerator at the Capital Regional Airport Authority (CRAA) in Lansing. The last compliance inspection of the facility was on February 28, 2018.

7/20/2021:

Arrived: 7:59 am

Weather: 68°F, wind WSW @ 4 MPH, UV Index 4

Departed: 5:16 pm

7/21/2021:

Arrived: 8:05 am

Weather: 63°F, wind NNE @ 3 MPH, UV Index 0

Departed: 3:40 pm

Contacts:

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Steve Ball (CRAA), Maintenance Mgr., 517-886-3725, sball@craa.com

Stack Testing Staff and Observers

PACE – Matt McDermott (lead) and 3 testing staff

EGLE – Julie Brunner, Mark Dziadosz, Trevor Drost

Facility Description:

CRAA operates the Capital Region International Airport. Domestic and international flights arrive and depart the airport daily. Waste from in-coming international flights is not allowed to be imported into the country and is incinerated on-site. The waste is regulated as Animal and Plant Health Inspection Section (APHIS) waste. The airport terminal is heated by two (2) natural gas-fired boilers. CRAA also has nine (9) diesel fuel-fired and natural gas-fired emergency engines for facility backup power.

The airport facility is located off West Grand River Avenue on the northwest side of Lansing in a mixed-use area with residential, commercial, and light industrial areas.

CRAA is a minor source of any regulated air contaminants including hazardous air pollutants (HAPs) but is subject to the Title V Renewable Operating Permit (ROP) program as discussed below. CRAA has one active Permit to Install (PTI) No. 118-08. PTI 118-08 is for the international waste incinerator.

The emission units and regulatory requirements are defined as follows:

Emission Unit ID (ROP app)	Emission Unit Description	Regulatory Requirements
EUINCINERATOR	Model 200-CA Destructor Waste Incinerator, Natural Gas-Fired, Burn Rate: 100-200 lb/hr, Maximum Charge: Burn Rate Divided by Three	PTI 118-08; 40 CFR 60, Subpart DDDD; Rule 974
EUENGINE01 - ONAN 80	Onan; Model # 60ENL39721F; natural gas-fired generator; 60 KW/80.4 HP (installed 06/29/1992)	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUENGINE02 - KOHLER 201	Kohler; Model # 6076AF010; Diesel fired generator; 150 KW/201 HP (installed 03/15/1994)	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUENGINE03 - KOHLER 107	Kohler; Model # 6059TF001; Natural gas fired generator; 80 KW/107.2 HP (installed 06/22/1993)	Rule 285(2)(g); 40 CFR 63, Subpart ZZZZ
EUENGINE04 - BC 469	Bridgeway Cummins; Model # QSX15-G9; diesel generator; 350 KW/469 HP (installed 10/01/2009)	Rule 285(2)(g); 40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ
EUENGINE05 - BC 243	Bridgeway Cummins; Model # DSGAD-1414796; diesel generator; 175 KW/243.5 HP (installed 12/1/2014)	Rule 285(2)(g); 40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ
EUENGINE06 - GEN 14	Generac; Model # 0J9321; natural gas-fired generator; 11 KW/14.74 HP	Rule 285(2)(g); 40 CFR 60, Subpart JJJJ; 40 CFR 63, Subpart ZZZZ

Emission Unit ID (ROP app)	Emission Unit Description	Regulatory Requirements
	(installed 5/15/2014)	
EUENGINE07 - BC 1072	Bridgeway Cummins; Model # QSK23-G7; diesel generator 800 KW/1072 HP (installed 8/25/2015)	Rule 285(2)(g); 40 CFR 60, Subpart IIII; 40 CFR 63, Subpart ZZZZ
EUENGINE08 - BC 113	Bridgeway Cummins; Model # GGH-5734690; natural gas-fired generator; 85 KW/113.9 HP (installed 10/15/2014)	Rule 285(2)(g); 40 CFR 60, Subpart JJJJ; 40 CFR 63, Subpart ZZZZ
EUENGINE09 - KUB 5.5	Kubota; Model # 518549; diesel fired portable generator; 5.5 KW/7.38 HP	NA
EU-BOILER1	Johnston natural gas-fired hot water boiler; Model # PFTJ200-4G60W; 200 HP	Rule 282(2)(b)(i)
EU-BOILER2	Johnston natural gas-fired hot water boiler; Model # PFTJ200-4G60W; 200 HP	Rule 282(2)(b)(i)
EU-GLYCOL01	5,000 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL02	5,000 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL03	4,000 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL04	3,000 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL05	2,500 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL06	2,500 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)
EU-GLYCOL07	1,500 gallon tank, AST, propylene glycol based; deicer type 1 and 4	Rule 284(2)(i)

Emission Unit ID (ROP app)	Emission Unit Description	Regulatory Requirements
EU-GAS 1K	Gasoline fuel; 1,000 gallon; AST	Rule 284(2)(g)(ii)
EU-GAS 5K	Gasoline fuel; 1,000 gallon; AST	Rule 284(2)(g)(ii)
EU-DIESEL 10K	Diesel fuel; 10,000 gallon; AST	Rule 284(2)(g)(ii)
EU-JET A 10K	Jet A fuel; 10,000 gallon; AST	Rule 284(2)(g)(ii)
EU-100LL 5K-01	100LL fuel; 5,000 gallon; AST	Rule 284(2)(g)(ii)
EU-100LL 5K-02	100LL fuel; 5,000 gallon; AST	Rule 284(2)(g)(ii)
EU-POT ACE	20,000 gallon AST; Potassium Acetate based deicer	Rule 284(2)(i)
Parts washer	CRC Smart Washer System; use Ozi-clean, biodegradable material. Washer fluid is added as needed with no waste stream. When not in use the lid on unit is closed. (Installed July 2013)	Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation

Review of Applicable Regulations:

The following is a review of federal standards for the diesel fuel-fired and natural gas-fired emergency generators and the incinerator at the facility.

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The diesel fuel-fired emergency generators may be subject to 40 CFR 60, Subpart IIII. Listed below is some of the applicability requirements for reference.

40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

§60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of §60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

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The natural gas-fired emergency generators may be subject to 40 CFR 60, Subpart JJJJ. Listed below is some of the applicability requirements for reference.

40 CFR 60, Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or

(ii) On or after January 1, 2009, for emergency engines.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) On or after January 1, 2009, for emergency engines.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

(5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.

(6) The provisions of §60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

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40 CFR 63, Subpart ZZZZ applies to the reciprocating internal combustion engines (RICE) located at CRAA. The emergency generators are all RICE except for the portable generator. Listed below is some of the applicability requirements for reference.

40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

§63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30 and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in §63.6675, which includes operating according to the provisions specified in §63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in §63.6640(f)(4)(ii).

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The international waste incinerator (EUINCINERATOR) is affected by Commercial and Industrial Solid Waste Incineration Units (CISWI) Regulations, 40 CFR 60, Subpart DDDD. The Commercial and Industrial Solid Waste Incineration (CISWI) Units Emission Guidelines (EG) were updated on June 23, 2016 and again on April 16, 2019. The requirements of 40 CFR 60, Subpart DDDD are in Rule 974, but there is no State Plan or Federal Plan to implement this emission guideline and the state rule also needs to be updated with the April 16, 2019 version. This EG requires each CISWI unit subject to the standards in 40 CFR 60, Subpart DDDD to obtain a Title V - Renewable Operating Permit (ROP) for the affected source. An application for an initial ROP was submitted on March 17, 2020. In addition to obtaining an ROP, the EG will require owners or operators of CISWI units to submit to the department a final control plan, waste management plan, and initial, semi-annual, and annual compliance reports to name a few of the requirements. The regulation and all the requirements can be found at the following link: http://www.ecfr.gov/cgi-bin/text-idx?SID=2b47922fadd116dba6c875af9fce20c8&mc=true&node=sp40.8.60.dddd&rgn=div6

Applicability (40 CFR 60, Subpart DDDD) –

CISWI units in the "incinerator" subcategory commenced construction on or before November 30, 1999 OR between November 30, 1999 and on or before June 4, 2010. An incinerator is any furnace used in the process of combusting solid waste for the purpose of reducing the volume of the waste by removing combustible matter and a CISWI is a distinct operating unit of any commercial or industrial facility that combusts any solid waste as defined by 40 CFR part 241. These definitions apply to CRAA incinerator which is a CISWI unit in the small remote incinerator, energy recovery unit, and waste-burning kiln subcategories that commenced construction on or before June 4, 2010.

The initial performance (emission) testing of EUINCINERATOR was originally scheduled for two days of testing to begin October 20, 2020 but was a failed attempt due to the probe melting. All data of the gas run that was completed 10/21/2020 (including the QA/QC) needs to be included in the final report submittal. There should also be an explanation as to why testing was paused/postponed.

The test protocol for emission testing of particulate matter (PM), hydrogen chloride (HCl), cadmium (Cd), carbon monoxide (CO), Dioxins/Furans (PCDD/PCDF), lead (Pb), mercury (Hg), nitrogen oxides (NOx) and sulfur dioxide (SO_2) on the natural gas-fired waste incinerator, EUINCINERATOR (PTI 118-08) was approved on October 13, 2020. The testing to demonstrate compliance with the limits in 40 CFR Part 60 Subpart DDDD, Table 6. PM, HCl, CO, NOx, and SO_2 will be tested according to US EPA reference methods 1, 2, 3A, 4, 5, 6C, 7E, 10, and 26A via three, 60-minute runs. Cd, Hg, Pb, and PCDD/PCDF will be tested according to US EPA reference methods 1, 2, 3A, 4, 23, and 29 and according to the procedures in 40 CFR 60, Subpart DDDD via three, 120-minute runs. Oxygen will be measured according to US EPA method 3A concurrently with all pollutants required by 40 CFR 60, Subpart DDDD. All QA of the methods apply.

Table 6 to Subpart DDDD of Part 60—Model Rule—Emission Limitations That Apply to Incinerators on and After [Date To Be Specified in State Plan][1]

For the air pollutant	You must meet this emission limitation[2]	Using this averaging time[3]	And determining compliance using this method[3]
Cadmium	0.0026 milligrams per dry standard cubic meter	3-run average (collect a minimum volume of 2 dry standard cubic meters)	Performance test (Method 29 at 40 CFR part 60, appendix A-8). Use ICPMS for the analytical finish.
Carbon monoxide	17 parts per million dry volume	3-run average (1 hour minimum sample time per run)	Performance test (Method 10 at 40 CFR part 60, appendix A-4).
Dioxins/furans (total mass basis)	4.6 nanograms per dry standard cubic meter	3-run average (collect a minimum volume of 2 dry standard cubic meters)	Performance test (Method 23 at 40 CFR part 60, appendix A-7).
Dioxins/furans (toxic equivalency basis)	0.13 nanograms per dry standard cubic meter	3-run average (collect a minimum volume of 2 dry standard cubic meters)	Performance test (Method 23 at 40 CFR part 60, appendix A-7).
Hydrogen chloride	29 parts per million dry volume	3-run average (For Method 26, collect a minimum volume of 60 liters per run. For Method 26A, collect a minimum	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A-8).

For the air pollutant	You must meet this emission limitation[2]	Using this averaging time[3]	And determining compliance using this method[3]
		volume of 1 dry standard cubic meter per run)	
Lead	0.015 milligrams per dry standard cubic meter	3-run average (collect a minimum volume of 2 dry standard cubic meters)	Performance test (Method 29 at 40 CFR part 60, appendix A-8). Use ICPMS for the analytical finish.
Mercury	0.0048 milligrams per dry standard cubic meter	3-run average (For Method 29 an ASTM D6784-02 (Reapproved 2008),[4] collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A)	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A-8) or ASTM D6784-02 (Reapproved 2008).[4]
Nitrogen oxides	53 parts per million dry volume	3-run average (for Method 7E, 1 hour minimum sample time per run)	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A-4).
Particulate matter filterable	34 milligrams per dry standard cubic meter	3-run average (collect a minimum volume of 1 dry standard cubic meter)	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A-3 or appendix A-8).
Sulfur dioxide	11 parts per million dry volume	3-run average (1 hour minimum sample time per run)	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A-4).
Fugitive ash	Visible emissions for no more than 5% of the hourly observation period	Three 1-hour observation periods	Visible emission test (Method 22 at 40 CFR part 60, appendix A-7).

[1]The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.

[2]All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.

[3]In lieu of performance testing, you may use a CEMS or, for mercury, an integrated sorbent trap monitoring system, to demonstrate initial and continuing compliance with an emissions limit, as long as you comply with the CEMS or integrated sorbent trap monitoring system requirements applicable to the specific pollutant in §§60.2710 and 60.2730. As prescribed in §60.2710(u), if you use a CEMS or

integrated sorbent trap monitoring system to demonstrate compliance with an emissions limit, your averaging time is a 30-day rolling average of 1-hour arithmetic average emission concentrations.

[4]Incorporated by reference, see §60.17.

Annual performance testing for the pollutants in Table 6 are required per 40 CFR 60.2710(b).

Another issue is 40 CFR 60.2680:

60.2680 What if I do not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations?

(a) If you use an air pollution control device other than a wet scrubber, activated carbon injection, selective noncatalytic reduction, fabric filter, an electrostatic precipitator, or a dry scrubber or limit emissions in some other manner, including mass balances, to comply with the emission limitations under § 60.2670, you must petition the EPA Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must submit the petition at least sixty days before the performance test is scheduled to begin. Your petition must include the five items listed in paragraphs (a)(1) through (5) of this section:

(1) Identification of the specific parameters you propose to use as additional operating limits;

(2) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters and how limits on these parameters will serve to limit emissions of regulated pollutants;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

A petition to EPA for specific operating limits for the afterburner is needed 60 days prior to testing. Currently, the operating limits for EUINCINERATOR are defined in PTI 118-08.

Michigan Air Emissions Reporting System (MAERS):

The facility is now required to report to MAERS and submitted their first report in 2020. The reported 2020 emissions are as follows:

EU-INCINERATOR:

AMMONIA - 0.28 LB

CO - 47.88 LB

NOx - 57.00 LB

PM10, PRIMARY - 4.33 LB

PM2.5, PRIMARY - 4.33 LB

SO_2 - 0.34 LB

VOC - 3.13 LB

RG-BOILERS:

AMMONIA - 6.61 LB

CO - 1132.32 LB

LEAD - 0.01 LB

NOx - 1348.00 LB

PM10, PRIMARY - 102.45 LB

PM2.5, PRIMARY - 102.45 LB

SO_2 - 8.09 LB

VOC - 74.14 LB

RG-ENGINES:

CO - 0.85 LB

NOx - 226.73 LB

PM10, PRIMARY - 2.92 LB

PM2.5, PRIMARY - 2.85 LB

SO_2 - 0.03 LB

VOC - 0.11 LB

RG-ENGINES NAT:

CO - 56.88 LB

NOx - 221.95 LB

PM10, PRIMARY - 4.58 LB

PM2.5, PRIMARY - 4.58 LB

SO_2 - 0.07 LB

VOC - 1.46 LB

Inspection/Stack Test Observations:

No visible emissions (VEs) were observed from any of the facility exhaust stacks upon arrival. No odors were identified surrounding the facility. The incinerator burn had not been started yet for the stack test when I arrived on 7/20/2021.

International Waste Incinerator, PTI 118-08:

EUINCINERATOR - A natural gas-fired Model 200-CA Destructor Waste Incinerator with a burn rate of 100-200 LB/HR.

Process Monitoring Parameters

Process Parameter	Monitoring Method	Target Range
Burn Rate	Automated Honeywell eZtrend QXe	≤200 LB/HR
Maximum Charge	Automated Honeywell eZtrend QXe	≤burn rate divided by 3
Incinerator Temperature	Automated Honeywell eZtrend QXe	≥1,600°F
Retention Time	Automated Honeywell eZtrend QXe	≥1.0 Seconds

The incinerator is not to exceed the following burn rates per SC 1.2:

Waste Type	Description (See Appendix A)	Burn Rate (pound/hour)
0	Trash	200 (200/3=66.7)
1	Rubbish	200 (200/3=66.7)
2	Refuse	145 (145/3=48.3)
3	Garbage	125 (125/3=33.3)

The volume of waste combusted can be up to 10 bags per day depending on what is received. It takes approximately 2.5 hours to burn 66 pounds of waste (roughly 60-100 pounds equal 8 hours of operation). The maximum the waste can be held by the flight crew is 72-hours. Once the waste is received at the incinerator building, it can only be held for 72-hours before burning.

The incinerator is in a small metal building on the north side of the airport. The building is heated with electric heaters. Labeled 2-wheeled carts with lids are lined up with the waste to be burned. A scale, logbooks, and Operation and Maintenance (O & M) manuals are in the building.

CRAA takes waste from other airports. CRAA received approval in September 2015 from DEQ-RRD and in August 2015 from Clinton County to take waste from other airports. (Copies of the waste importation and letter of consistency for airport APHIS waste, Waste Data System Number 494983 were obtained with the last inspection.) CRAA started taking waste from other airports in November of 2015. AV Flight is the waste hauler and operator of the incinerator. The waste defined as APHIS meets the conditions of the permit.

Currently CRAA is approved to pick up APHIS waste from the following airport locations:

Grand Rapids – Amway, Signature Flight Support, Steelcase

Kalamazoo/Battle Creek - Duncan Aviation, Hinman Company

Pontiac/Oakland - Pentastar Aviation

Saginaw - Dow Chemical

Ypsilanti – AV Flight Willow Run

Lansing

A copy of the "CRAA International Garbage Incinerator Log" for 12/01/2020 to 9/17/2021 was emailed. Burning is staggered throughout the day so that no more than 66.7 lbs is combusted at any one time. The waste type is not defined on the logs, but a note at the bottom of the logs indicates that the bags cannot weigh more than 66 pounds. There appear to be exceedances (greater than 66.7 lbs) of the maximum charge rate which is the burn rate divided by three (SC 1.4) as calculated by AQD based on logs.

Total Weight Charged	Date and Time of Incineration
72.120 lbs	12-2-20 (0848)
85.305 lbs	1-4-21 (1530)
90.140 lbs	3-1-21 (1123)
70.675 lbs	4-11-21 (0715 & 0800)
100.985 lbs	5-10-21 (1117)
74.045 lbs	6-29-21 (1100)

78.995 lbs	**7-1-21 (1125)**
73.66 lbs	**8-11-21 (1140)**

The exceedances were confirmed by CRAA and they have made their incinerator operators aware of this as well. CRAA will also reiterate this in their fall operator training.

The incinerator is vertical with a lower chamber for burning the waste and an upper chamber for the afterburner control of exhaust gases from the burning. To operate, both chambers are heated at the same time to 1600°F which takes about an hour. Then the operator opens the door and throws the bag of waste in the lower chamber. Temperatures in the incinerator can get up to 2300°F. After the waste is finished burning in the lower chamber, the upper chamber stays on for 4 to 6 hours after.

A minimum temperature of 1600°F is required to be maintained in the secondary chamber (upper chamber afterburner) per special condition (SC) 1.5. From the instrumentation on the incinerator, the temperature history can be downloaded electronically but not easily. For the temperature records, Loy Instruments must be contacted to download the information from the controller. Records obtained for the last inspection in 2018 show that generally the afterburner operates at temperatures greater than 1600°F but they dip briefly when the incinerator door is opened to introduce waste to be combusted. So far, CRAA has been unable to provide the temperature history since they are dependent on Loy Instruments to download the data. An upgrade to the controller system to track and record the temperature information is needed. The afterburner appeared to be installed, maintained, and operated in a satisfactory manner per SC 1.6 generally but the temperature controller/recorder is a problem. Per 1.8, CRAA is required to keep, in a satisfactory manner, temperature records for the afterburner on EUINCINERATOR. The temperature records do not appear to be kept in a satisfactory manner.

The most recent incinerator calibration was performed by Loy Instruments on 9/27/2021 and the report was emailed on 9/29/2021. Loy Instruments tried to extract the temperature data from the recorder but was unable to retrieve any information due to the record button not being pressed allowing the recording process. This can occur due to a power outage and dead battery backup. Due to this occurrence, CRAA will now check this function during incinerator inspections. The handwritten data taken during the 7/20&21/2021 testing is the only afterburner temperature data available.

Appendix B – Operation and Maintenance Guidelines (PTI 118-08):

There is annual training of all operators given by the USDA on prohibited items and CRAA updates programs before training. There are currently thirteen operators (AV Flight) trained. The last training was done on December 4, 2020.

In Appendix B, No. 10 is the requirement for quarterly inspections to check and service all equipment.

The incinerator is inspected by Joseph Day for mechanical and Loy Instrumentation for electrical. Loy calibrates the temperature gauge once per year as part of the electrical inspection. The biggest maintenance issue according to CRAA staff at the last inspection is the thermal couples. Spare parts such as thermal couples are kept on-site. Annual inspections are regularly completed, and quarterly inspections are now being completed.

Appendix C – Waste Management Plan (PTI 118-08):

1. Containers – closed. 6 mil bags – yellow, labeled "International Trash Only". The ash bags are 5 mil, puncture resistant, and black. The internal trash is transported in containers labeled "Regulated Garage" and collected by the waste hauler (AV Flight) from the airports.

2. Spill containment and adsorbent material are in the building. The Log of Spills is blank because there have been no spills in the building.

3. Locked building, and signs posted on door.

4. No prohibited waste.

The building that houses the incinerator is well kept and clean. All waste and ash from the incinerator are in closed containers. The floor is clean of any debris and the operation appears well organized.

The operator removes the ash from the bottom of the incinerator by shovel, puts it in a bag that is in a 55-gallon metal can, and transfers the closed bag to a larger container with a lid labeled "International Ash". A pickup truck takes the ash out for disposal every 1 to 2 months. The ash goes to Granger at Wood Street for disposal. The ash is tested once per year. The parameters tested are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. All parameters were below detection except for barium at 4.3 mg/L in the TCLP extract on the 7/29/2021 sample. The analysis was a leach test using method EPA 3005A/EPA 6020A.

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Stack Test Observations

For EUINCINERATOR, process operation emissions were sampled at the maximum achievable load (~66.7 lb/hr or as close to) while burning a representative type of waste. During each test run the following information was recorded:

• Process material

• Burn Rate

• Charge Rate

• Temperature of secondary combustion chamber

7/20/2021

8:00 am – Incinerator started-up

9:37 am – Waste introduced into the incinerator and the test was started 5 minutes after door closed.

9:43 am – Afterburner temperature was 1802 degrees F

For the test, international waste was used for the first run and waste collected from domestic flights was used for later test runs since they did not have enough international waste for all the testing. Domestic waste is basically the same as what is coming from international flights. CRAA incinerator logs were kept as normal during the test including the weight and time of was introduction. The incinerator was last used on 7/14/2021. For the first run, a waste charge rate of 53.1 lbs had been weighed out and was ready to go into the incinerator for the test. The plan was to operate as normally as possible. The maximum charge rate is 66 lbs and a cycle is normally 2-hours, then the incinerator is allowed to cool, and ash is cleaned out. The ash was not going to be cleaned out until testing was completed for the day. Between each test run, waste was added. For the 2-hour test runs the waste was divided in half so that at the same amount of waste would be combusted for each test run. The waste is also raked at least once during an incinerator burn to promote good combustion of the waste. Also, Method 22 (fugitive emission measurements) were taken at the window opposite the incinerator while raking and introduction of waste.

The CRAA operator manually logged afterburner temperature every 15 minutes and noted when waste was loaded and raked. At 10:47 am, the incinerator timed out (shut off) and the afterburner temperature dropped to below 1400 degrees F. This run was not acceptable because the incinerator was operating in violation of PTI 118-08.

Run #2 –

12:07 pm – 63.705 lbs of waste introduced into the incinerator.

12:11 pm – Start of test run

1:07 pm – Afterburner temperature at 2027 degrees F.

1:18 pm – Raked waste

Had trouble with a leak test. Temperature in the probe dropped. Lost 4 points collected in Run #2 but called it good.

Had trouble calibrating for the next run.

Run #3 –

3:31 pm – Afterburner temperature was 1908 degrees F

3:32 pm – 63.325 lbs of waste introduced into the incinerator

3:37 pm – Start of test run

4:48 pm – Raking and Method 22 done at window

Run #4 –

5:32 pm – Afterburner temperature was 2117 degrees F

5:32 pm – 60.55 lbs of waste introduced into the incinerator and test was started 5 minutes after door closed.

6:50 pm – Raked waste. Afterburner temperature was 2175 degrees F.

7:32 pm – Incinerator shutdown

Completed testing of PM, HCl, CO, NOx, and 2 runs of SO_2. Projected to fail NOx.

<u>7/21/2021</u> – Testing scheduled for dioxins/furans, metals, 1-run of SO_2, O_2, CO_2 and all domestic waste being combusted.

Arrived: 8:05 am

Weather: 63 degrees F, NNE3 mph, UV Index 0

Departed: 3:40 pm

Run #5 –

8:12 am – Incinerator started-up

9:30 am – A waste ½ charge of 26.67 lbs was put into the incinerator and officially the test was started at 9:35 am.

9:35 am – Afterburner temperature was 1791 degrees F.

Broke probe on metals train and only testing dioxins/furans.

10:40 am – The second waste ½ charge of 29.585 lbs was put into the incinerator and waste was raked.

12:00 pm – Waste raked.

Run #6 –

12:45 pm – Afterburner temperature was 2088 degrees F.

12:46 pm – A waste ½ charge of 45.42 lbs was put into the incinerator and officially the test was started at 12:51 pm.

1:55 pm – The second waste ½ charge of 16.815 lbs was put into the incinerator and waste was raked.

2:00 pm – Afterburner temperature was 2130 degrees F.

Broke probe so testing of dioxins/furans was incomplete.

To summarize, testing was completed for PM, HCl, CO, NOx, SO_2 and fugitive ash. Testing was not completed for dioxins/furans and metals.

Based on the draft testing report sent 9/16/2021, they will not be able to show compliance with the emission limitations in 40 CFR 60, Subpart DDDD (Rule 974(9)(d)) for NOx, HCl and PM. Also, EUINCINERATOR has a control system (afterburner) that will require EPA to approve this alternative and so far compliance with some of the emission limits have not been demonstrated for the alternative control system.

On 9/17/2021, CRAA requested an extension from the 60-day testing report submittal requirement (Rule 1001(5)0. The notification was provided to request a two-week extension to evaluate the test results, formulate a work plan, and timeline for compliance.

Facility Heat

For the main terminal of the airport, heat is provided by two (2) identical 8.2 MMBtu/hr natural gas-fired boilers located in a separate room beside the baggage claim area. The boilers were installed in 2002 and were manufactured by Johnston Boiler Company. The date of manufacture for the boilers is 2002. One boiler is operated at a time with one on stand-by. Every two (2) weeks the boilers are switched from operating to standby. The boilers are inspected every January to February by Joseph Day. The state inspection is on a 3-year cycle.

The boilers were re-built in 2010 (refractory) and Boiler #2 was redone in 2012 due to cracking. The boilers exhaust out the roof, straight up – approximately 6 feet above the roof. The roof height is ~ 20 feet.

The boilers are too small (<10 MMBtu/hr) to be subject to 40 CFR 60, Subpart Dc - New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units. The natural gas-fired boilers are not subject to 40 CFR 63, Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources because they meet the definition of a gas-fired boiler.

The boiler(s) meet the requirements of exemption from permitting Rule 282(2)(b)(i).

Emergency Generators

There are four (4) diesel fuel-fired, four (4) natural gas-fired, and one (1) portable diesel fuel-fired emergency generator on-site.

The generators are tested once per month and serviced once per year. The location and clock time for each generator is as follows:

ID Number	ROP ENGINE ID	Generator	Fuel Type	Gallons	Location	Hours
GNRT-4	EU-ENGINE 01-ONAN 80	Onan 60KW	Natural Gas	N/A	Field Maintenance	1050.5

ID Number	ROP ENGINE ID	Generator	Fuel Type	Gallons	Location	Hours
GNRT -3	EU-ENGINE 02 - KOHLER 201	Kohler / 150KW	Diesel		West Terminal	503.1
GNRT-1	EU-ENGINE 03 - KOHLER 107	Kohler / 80KW	Diesel		Fuel Farm	488.3
GEN-564	EU-ENGINE 09 - KUB 5.5	Kubota / 5500 Watt	Diesel		Portable	N/A
GNRT-2	EU-ENGINE 04 - BC 469*	Bridgeway Cummins / 350KW	Diesel	24.1	East Terminal	231.8
GNRT-7	EU-ENGINE 05 - BC 243*	Bridgeway Cummins / 175KW	Diesel	28 GPH	ARFF	100.9
GNRT-5	EU-ENGINE 06 - GEN 14*	Generac / 11KW	Natural Gas		Gate 10	160.4
GNRT-8	EU-ENGINE 07 - BC 1072*	Bridgeway Cummins / 800KW	Diesel	56.4	West Terminal	81.7
GNRT-6	EU-ENGINE 08 - BC 113*	Bridgeway Cummins / 85KW	Natural Gas		Parking Lot	

* **NSPS subject generators.**

OR,

Clock hours on all generators (as provided by Steve on 7/26/2021) which doesn't match any naming convention. This list probably includes the portable generator and GNRT-9 is on the master generator list but this generator operates a gate at the Mason Jewett Airport in Mason Michigan.

a. Generator 1-638
b. Generator 2-368
c. Generator 3-624
d. Generator 4-1214
e. Generator 5-100
f. Generator 6-410
g. Generator 7-253
h. Generator 8-169

a. Generator 9-136
j. Generator 10-81

At the previous inspection in 2018, GNRT-2 (EUENGINE04 - BC 469) was inspected. It is in the east terminal in a locked room. The following information was recorded off the generator:

Cummins Power Generation, diesel fuel-fired, 350 kW:
Engine Model No. QSX15-G9
Engine Serial No. 32060411
Engine exhaust is out the south sidewall, horizontally.
Engine Clock Hours on 2/28/2018 - 280.3 hours

The largest generator on-site is 800 kW and uses at maximum 56.4 gph of diesel fuel. The maximum heat input for this engine is calculated as follows: 56.4 gph x 0.1385 MMBtu/gal = 7.81 MMBtu/hr. The generator meets exemption Rule 285(2)(g) for internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input.

The sulfur content of the fuel oil used at the facility is less than 0.0015% by weight as required by the NRLM diesel fuel standard in 40 CFR 1090.305. For emergency generators, it is assumed that they operate no more than 500 hours per year at worse case.

All emergency generators on-site appear to meet exemption Rule 285(2)(g).

Follow-up on the generators include checking compliance with applicable regulations for 40 CFR 60, Subpart IIII; 40 CFR 60, Subpart JJJJ; and 40 CFR 63, Subpart ZZZZ which include emission limits, work practice standards, operating restrictions, and monitoring / recordkeeping.

Maintenance Building:
This building was not inspected but does have an aqueous based parts washer. It uses Ozi-Clean, biodegradable material. Washer fluid is added as needed with no waste stream. When not in use, the lid on the unit is closed. The aqueous based parts washer appears to meet exemption Rule 281(2)(k).

Records:
The following records were emailed and in the file.

1. CRAA International Garbage Incinerator Log – 12/01/2020 to 9/17/2021
2. Copies of the Granger Non-Hazardous Waste & Asbestos Manifests dated 1/16/2020, 2/28/2020, 04/02/2020, and 3/30/2021.
5. Copy of the ash analysis – sample analysis for 06/04/2019 and 07/29/2021.
6. SOP for APHIS Regulated Garbage – Updated 5/21/2021.
7. CRAA Training Logs dated 12/04/2020
8. Joseph Day Preventative Maintenance service logs dated 2/25/2020, 7/2/2020, 12/16/2020, 6/17/2021
9. Emergency generator list and some specs
10. Draft testing report and handwritten afterburner temperature logs.
11. Loy Instruments – 9/29/2021 – 2021 Incinerator Calibration Report

Summary:
The facility appeared to have non-compliance with several special conditions in PTI 118-08 and Rule 974. Per the requirements of Rule 974, the initial Title V application has been received. A final control plan, waste management plan, and initial, semi-annual, and annual compliance reports are requirements of this rule that are pending.

The emergency generators were not reviewed for compliance with their subject NSPS. This information was requested but has not been received yet. This is a follow-up inspection item.

Additional follow-up items include VNs for exceeding the incinerator charging rate eight times between December 2020 and August 2021, operating the incinerator afterburner at below the temperature required in PTI 118-08, not keeping satisfactory records of the temperature monitoring (they must have the vendor download the data from the controller and it is

unavailable for this inspection), and violations of Rule 974(9)(d).

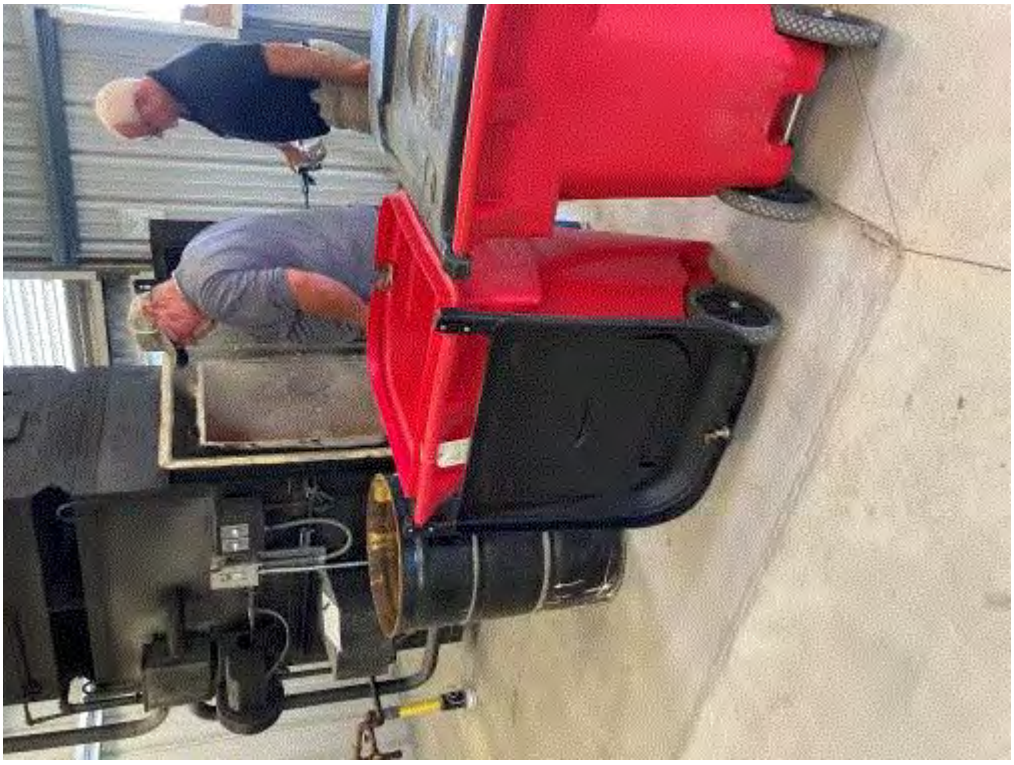

Image 1(IMG_0225) : Loading the incinerator

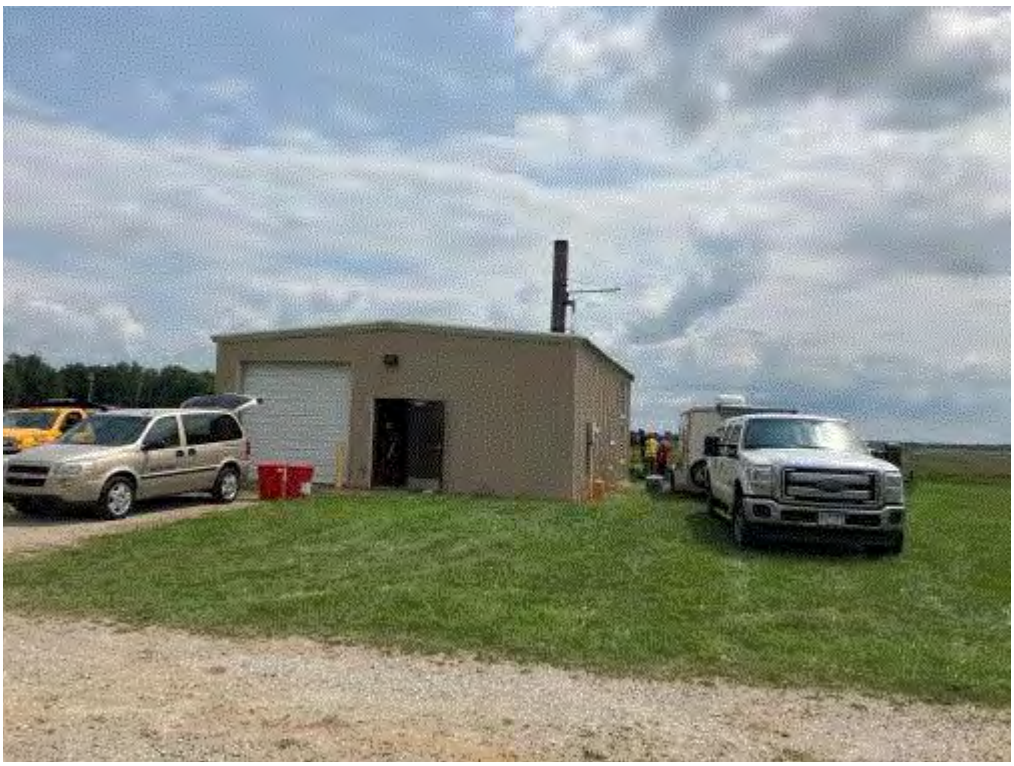

Image 2(IMG_0227) : Stack testing

NAME Julie L. Brunner DATE 9/30/2021 SUPERVISOR B.M.

Julie L. Brunner