



Statement of Basis
NASA John H. Glenn Research Center - Lewis Field
Permit Number: P0094315
Facility ID: 1318001169

<p>Please identify the affected unit(s) and associated PTI, if applicable, along with a brief description of any changes to the permit document that qualify as a reopening per OAC rule 3745-77-08(D)</p>	<p>N/A</p>
<p>Please identify the affected unit(s) and associated PTI, if applicable, along with a brief description of any changes to the permit document resulting from a renewal per OAC rule 3745-77-08(E)</p>	<p>B005 – incorporation of 25 TPY NOx limitation to avoid requirements of OAC rule 3745-110; negative declaration of applicability citation or 40 CFR Part 60, Subpart JJJJJJ</p> <p>B014 – incorporation of NOx RACT Tune-up language and negative declaration of applicability citation for 40 CFR Part 60, Subpart JJJJJJ</p> <p>B015 – incorporation of NOx RACT Tune-up language and negative declaration of applicability citation for 40 CFR Part 60, Subpart JJJJJJ</p> <p>B020 – (PTI #13-04494 issued 9/15/2005) – incorporate NOx RACT exemption term</p> <p>B022 - incorporate NOx RACT exemption term</p> <p>B023 – (PTI #13-03436 issued 11/23/1998) – incorporate emission limitations identified in previously issued Title V permit that were not addressed in an administrative modification of the PTI at the time so that the PTI and Title V permit emission limitations will now match.</p> <p>B024 - incorporate NOx RACT exemption term</p> <p>B025 - incorporate NOx RACT exemption term</p> <p>B026 - incorporate NOx RACT exemption term</p> <p>B027 – (PTI #13-03921 issued 3/5/2002) – update PE language and incorporate NOx RACT exemption term</p> <p>B028 – (PTI #13-03995 issued 6/18/2002) – incorporate NOx RACT exemption term</p> <p>B030 – (PTI # 13-04353 issued 2/9/2006) - correct NOx and CO lb/hr b)(1)a.; incorporate NOx RACT exemption; correct f)(1)a. emission factor and f)(1)b. CO lb/hr; change description to reflect de-rating of horse power output to 280 HP; add CFR 40 Part 63 Subpart ZZZZ requirements.</p> <p>B031 – (PTI # 13-04353 issued 2/9/2006) PTI revoked, unit is now on Permit By Rule (PBR) status</p> <p>B032 – (PTI # 13-04353 issued 2/9/2006) – update visible PE language; incorporate NOx RACT exemption term; add CFR 40 Part 63 Subpart ZZZZ requirements.</p> <p>B038 – (PTI P0106967 issued 3/9/2011) negative declaration of applicability citation or 40 CFR Part 60, Subpart JJJJJJ</p> <p>B039 – (PTI P0106966 issued 3/9/2011) negative declaration of applicability citation or 40 CFR Part 60, Subpart JJJJJJ</p> <p>P001 - incorporate NOx RACT exemption term</p> <p>P010 - (PTI # 13-02958 issued 4/12/1995) – incorporate NOx RACT exemption term</p> <p>P017 – (PTI #13-03096 issued 7/27/1996) PTI revoked unit was installed in 1956</p>



C. Emissions Unit Terms and Conditions

Key:

- | | |
|--|---|
| EU = emissions unit ID
ND = negative declaration (i.e., term that indicates that a particular rule(s) is (are) not applicable to a specific emissions unit)
OR = operational restriction
M = monitoring requirements
ENF = did noncompliance issues drive the monitoring requirements? | R = record keeping requirements
Rp = reporting requirements
ET = emission testing requirements (not including compliance method terms)
St = streamlining term used to replace a PTI monitoring, record keeping, or reporting requirement with an equivalent or more stringent requirement
Misc = miscellaneous requirements |
|--|---|

EU(s)	Limitation	Basis		ND	OR	M	ENF	R	Rp	ET	St	Misc	Comments
		SIP (3745-)	Other										
B005	20% opacity as a 6 min avg	17-07(A)		N	Y	Y	N	Y	Y	Y	N	N	OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil R – each day during the 3 rd quarter record total amount of number two fuel oil burned, in gallons; total number of hours the emissions units were in operation; daily average operating rate, in mmBtu/hr; the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates; exceedances of the daily average operating rate restrictions during the third calendar quarter of each year ET – if required



B005	PE – 0.020 lb/mmBtu	17-10(B)(1)		N	Y	Y	N	Y	Y	Y	N	N	<p>OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation</p> <p>M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil</p> <p>R – each day during the 3rd quarter record total amount of number two fuel oil burned, in gallons; total number of hours the emissions units were in operation; daily average operating rate, in mmBtu/hr; the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned</p> <p>Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates; exceedances of the daily average operating rate restrictions during the third calendar quarter of each year</p> <p>ET – if required</p>
B005	SO2 – 1.2 lbs/mmBtu	18-24(M)(2)		N	Y	Y	N	Y	Y	Y	N	N	<p>OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation</p> <p>M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil</p> <p>R – each day during the 3rd quarter record total amount of number two fuel oil burned, in gallons; total number of hours the emissions units were in operation; daily average operating rate, in mmBtu/hr; the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned</p> <p>Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates; exceedances of the daily average operating rate restrictions during the third calendar</p>



														quarter of each year ET – if required
B005	NOx - 25 TPY as rolling, 12-month summation	110-03(J) (16)		N	N	N	N	Y	Y	Y	N	N		R – records of monthly and rolling, 12-month NOx emissions Rp - identify any exceedance of the rolling, 12-month NOx limitation of 25 tons Et – if required
B005	Periodic testing of fuel oil shall not exceed 48 hours during any calendar year		40 CFR Part 63 Subpart JJJJJ	N	Y	Y	N	Y	Y	N	N	N		OR - Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year R - maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil Rp - any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing
B014 & B015	20% opacity as a 6 min avg	17-07(A)		N	Y	Y	N	Y	Y	Y	N	N		OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil R – the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates ET – if required



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B014 B015	& PE – 0.020 lb/mmBtu	17-10(B)(1)		N	Y	Y	N	Y	Y	Y	N	N	<p>OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation</p> <p>M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil</p> <p>R – the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned</p> <p>Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates</p> <p>ET – if required</p>
B014 B015	& SO2 – 1.6 lbs/mmBtu	18-06(D)		N	Y	Y	N	Y	Y	Y	N	N	<p>OR - only burn natural gas and/or number two fuel oil; sulfur and heat content sufficient to comply with allowable SO2 limitation</p> <p>M – perform analyses on each batch of fuel for sulfur content and heat content; collect representative grab sample of oil</p> <p>R – the total quantity of oil received and each day when fuel other than natural gas and/or number two fuel oil including the type and quantity of fuel burned</p> <p>Rp - each day when a fuel other than natural gas and/or number two fuel oil was burned; any record showing a deviation of the allowable SO2 emission rates</p> <p>ET – if required</p>



B014 & B015	Periodic testing of fuel oil shall not exceed 48 hours during any calendar year		40 CFR Part 63 Subpart JJJJJJ	N	Y	N	N	Y	Y	N	N	N	OR - Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year R - maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil Rp - any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing
B020	NOx – 3.2 lbs/hr & 14 TPY CO – 2.7 lbs/hr & 11.8 TPY SO2 - 0.02 lbs/hr & 0.09 TPY PE - 2.8 TPY 5% opacity as a 6 min avg	31-05(A)(3)		N	Y	N	N	Y	Y	Y	N	N	OR - only burn natural gas and/or number two fuel oil R - each day when fuel other than natural gas is burned including the type and quantity Rp - each day when a fuel other than natural gas was burned Et – if required
B020	PE - 0.020 lb/mmBtu of actual heat input	17-10(B)(1)		N	Y	N	N	Y	Y	Y	N	N	OR - only burn natural gas and/or number two fuel oil R - each day when fuel other than natural gas is burned including the type and quantity Rp - each day when a fuel other than natural gas was burned Et – if required
B022, P001, & P901		17-11(B)		Y	N	N	N	N	N	N	N	N	ND – unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.



P027	restriction on annual jet fuel usage of 800,000 gallons per rolling 12 months; CO 5.54* NOx 23.63* PE 8.52* SO ₂ 20.8* VOC 2.57* *TPY limit	31-05(D)(1)		N	Y	N	N	Y	Y	N	N	N	OR - burn only commercially available naphtha and kerosene-based distillate fuels; commercially no more than 800,000 gallons burned per year based upon a rolling, 12-month summation R - monthly records of the name and/or identification number of each fuel used; amount used each month; the rolling, 12-month summation of the fuel consumed Rp – submit quarterly deviation reports identifying exceedances of the 800,000 gallons per year fuel limitation
P027	20% opacity, as a 6 min avg.	17-07(A)		N	N	Y	N	Y	N	N	N	N	M – daily visible emission checks R – observations of visible emissions
B038 & B039	When burning natural gas: NOx - 1.34 lbs/hr & 5.87 TPY PE - 0.32 lb/hr & 1.40 TPY OC - 0.46 lb/hr & 2.01 TPY VOC - 0.23 lb/hr & 1.01 TPY When burning No. 2 Fuel Oil: NOx - 5.96 lbs/hr PE - 0.6 lbs/hr	31-05(A)(3)		N	Y	Y	N	Y	N	N	N	N	OR - burn only natural gas and/or No. 2 fuel oil; No. 2 fuel oil sulfur and heat content sufficient to comply with the allowable sulfur dioxide emission limitation of 0.50 lb/mmBtu and the sulfur content limitation for No. 2 fuel oil of less than or equal to 0.3 per cent sulfur; annual No. 2 fuel oil usage rate shall not exceed 580,000 gallons based upon a rolling, 12-month summation. M - perform or require the supplier to perform analyses for sulfur content and heat content R - collect or require oil supplier to collect representative grab sample of oil for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu) and maintain records of the total quantity of oil received; maintain monthly records of the name and/or identification number of each fuel used; amount used each month; the rolling, 12-month summation of the fuel consumed



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	CO - 1.5 lbs/hr 20% opacity, as a 6 min avg													
B038 & B039	NOx - 5.8 CO - 1.45 PE - 0.58 SO2 - 12.35 annual No. 2 fuel oil usage rate for this emissions unit shall not exceed 580,000 gallons based upon a rolling, 12-month summation	31-05(D)		N	Y	Y	N	Y	N	N	N	N		OR - annual No. 2 fuel oil usage rate for this emissions unit shall not exceed 580,000 gallons based upon a rolling, 12-month summation M - perform or require the supplier to perform the analyses for sulfur content and heat content R - collect or require oil supplier to collect representative grab sample of oil for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu) and maintain records of the total quantity of oil received; maintain monthly records of the name and/or identification number of each fuel used; amount used each month; the rolling, 12-month summation of the fuel consumed
B038 & B039	When burning natural gas: CO - 0.08 lb/mmBtu. When burning No. 2 Fuel Oil: SO2 - 0.50 lb /mmBtu		ORC) rule 3704.03(T)	N	Y	N	N	N	N	N	N	N		OR - burn only natural gas and/or No. 2 fuel oil; No. 2 fuel shall have a combination of sulfur and heat content sufficient to comply with the allowable sulfur dioxide emission limitation of 0.50 lb/mmBtu and the sulfur content limitation for No. 2 fuel oil of less than or equal to 0.3 per cent sulfur



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B038 & B039	PE - 0.020 lb/mmBtu	17-10(B)(1)		N	N	Y	N	Y	N	N	N	N	M - perform or require the supplier to perform the analyses for sulfur content and heat content R - collect or require oil supplier to collect representative grab sample of oil for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu) and maintain records of the total quantity of oil received; maintain monthly records of the name and/or identification number of each fuel used
B038 & B039	Annual boiler tune-up	110-03(A)		N	N	Y	N	Y	N	N	N	N	M - perform a tune-up annually R - maintain a log book, of the following information: the date of the last tune-up; the name, title and affiliation of the person who performed the tune-up and made any adjustments; and any other information which the Ohio EPA may require as a condition of approval of any permit for the boiler
B038 & B039	SO2 - 0.50 lb/mmBtu when burning No. 2 fuel oil. 20% as a 6 min avg except for one 6- minute period per hour of not more than 27% opacity.		40 CFR Part 60 Subpart Dc	N	N	Y	N	Y	N	N	N	N	M - perform or require the supplier to perform the analyses for sulfur content and heat content R - collect or require oil supplier to collect representative grab sample of oil for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu) and maintain records of the total quantity of oil received; maintain monthly records of the name and/or identification number of each fuel used



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B038 & B039	Periodic testing of fuel oil shall not exceed 48 hours during any calendar year		40 CFR Part 63 Subpart JJJJJ	N	Y	N	N	Y	Y	N	N	N	OR - Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year R - maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil Rp - any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing
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**Division of Air Pollution Control
Title V Permit
for**

NASA John H. Glenn Research Center - Lewis Field

Facility ID:	1318001169
Permit Number:	P0094315
Permit Type:	Renewal
Issued:	3/1/2013
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance



1. B005 - BOILER05-B012

Operations, Property and/or Equipment Description:

B005 - 90 mmBtu/hr natural gas and number two fuel oil-fired steam boiler

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) b)(1)d.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input.
c.	OAC rule 3745-18-24(M)(2)	Sulfur dioxide (SO ₂) emissions shall not exceed 1.2 lbs/mmBtu actual heat input. See b)(2)a. below.
d.	OAC rule 3745-110-03(J)(16)	Nitrogen Oxide (NO _x) emissions shall not exceed 25 tons per year (TPY) as a rolling, 12-month summation. See d)(1), e)(1), and f)(1)a. below.
e.	40 CFR Part 63, Subpart JJJJJJ	See b)(2)b., c)(3), d)(6), and e)(5) below.

(2) Additional Terms and Conditions

a. The daily operating rate for emissions unit B005 shall not exceed 56 mmBtu/hr during the third quarter when burning number two fuel oil.



b. This emissions unit is not subject to the requirements 40 CFR Part 63, Subpart JJJJJJ while burning fuel oil during periods of gas curtailment, gas supply emergencies, or periodic testing on fuel oil.

c) Operational Restrictions

(1) The permittee shall only burn natural gas and/or number two fuel oil in this emissions unit.

[Authority for term: OAC rule 3745-77-07(A)(1)]

(2) The quality of the oil burned in this emissions unit shall have a combination of sulfur content and heat content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in b)(1)c. above.

[Authority for term: OAC rule 3745-77-07(A)(1)]

(3) Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year.

[Authority for term: OAC rule 3745-77-07(A)(1)]

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall calculate and maintain monthly records of the NOx emissions and the rolling, 12-month emissions of NOx. The NOx emissions shall be calculated in accordance with f)(1)a. below.

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-31-05(F)]

(2) For each day during which the permittee burns a fuel other than natural gas and/or number two fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The permittee shall collect and record the following information for each day during the third calendar quarter of each year for emissions units B004 and B005:

- a. the total amount of number two fuel oil burned, in gallons;
- b. the total number of hours the emissions units were in operation; and
- c. the daily average operating rate, in mmBtu/hr. (The heat content for the oil from d)(3) may be used to back calculate the daily average operating rate.)

[Authority for term: OAC rule 3745-77-07(C)(1)]

(4) For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission



rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).). A shipment may be comprised of multiple tank truck loads from the same supplier's batch and the quality of the oil for those loads or may be represented by a single batch analysis from the supplier.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (5) The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Cleveland Division of Air Quality (Cleveland DAQ).

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-18-04(A)]

- (6) The permittee shall maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify any exceedance of the rolling, 12-month NOx limitation of 25 tons.

The deviation (excursion) reports shall be submitted to the Cleveland DAQ within 30 days after the exceedance occurs.

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-31-05(F)]

- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or number two fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (3) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from d) above. The notification shall include a copy of such record and shall be sent to the Cleveland DAQ within 45 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (4) The permittee shall submit a deviation (excursion) report that documents all exceedances of the daily average operating rate restrictions during the third calendar quarter of each year. The report shall be submitted within thirty days after the end of the third quarter.



The deviation reports shall be submitted in accordance with the Standard Terms and Conditions.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (5) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (6) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
 NOx emissions shall not exceed 25 TPY per rolling, 12-month summation

Applicable Compliance Method:

The emission limitations were based upon the emission factor for natural gas combustion taken from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table and Section 1.3, Table 1.3-1 (9/98) for No. 2 fuel oil combustion.

Compliance with the annual NOx emission limitation shall be determined through the following equation using the emission factors:

$$\frac{(100 \text{ pounds NOx/mm scf gas burned} \times \text{monthly amount of natural gas burned}) + (24 \text{ pounds NOx/1,000 gallons No. 2 fuel oil} \times \text{monthly No. 2 fuel oil usage})}{2,000 \text{ pounds/ton}} = \text{tons NOx/month}$$

The monthly emissions shall then be added together to determine the rolling, 12-month summation.

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-31-05(F)]

- b. Emission Limitation:
 PE shall not exceed 0.020 lb/mmBtu of actual heat input.



Applicable Compliance Method:

When firing number two fuel oil, compliance may be determined by multiplying an emission factor of 2.0 pounds of particulates/1,000 gallons of oil fired by the emissions unit's maximum hourly fuel oil firing capacity (640.7 gallons/hour) and dividing by the emissions unit's rated heat input capacity (90 mmBtu/hour). This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.3, Table 1.3-1 (9/98).

When firing natural gas, compliance may be determined by multiplying an emission factor of 1.9 pounds of particulates/mmscf by the emissions unit's maximum hourly natural gas firing capacity (0.090 mmscf/hour) and dividing by the emissions unit's rated heat input capacity (90 mmBtu/hour). This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-2 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(9), while firing number two fuel oil.

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-17-10(B)(1)]

c. Emission Limitation:

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-17-03(B)(1)(a)]

d. Emission Limitation:

SO₂ emissions shall not exceed 1.2 lbs/mmBtu actual heat input.

Applicable Compliance Method:

When firing fuel oil, compliance with the allowable sulfur dioxide emission limitation may be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation, as required in the monitoring and record keeping requirements above.



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When firing natural gas, compliance with this limitation will be assumed due to the negligible percent sulfur, by weight, in the fuel.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6, while firing number two fuel oil.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-18-04(A), and 3745-18-24(M)(2)]

g) Miscellaneous Requirements

- (1) Emissions unit B005 was installed 6/1/1970.



2. Emissions Unit Group -2 - 45.5 mmBtu/hr Steam Boilers: B014,B015,

Operations, Property and/or Equipment Description:

B014	45.4 mmBtu/hr natural gas and number two fuel oil-fired steam boiler
B015	45.4 mmBtu/hr natural gas and number two fuel oil-fired steam boiler

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-17-07(A)	Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
b.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 lb/mmBtu of actual heat input.
c.	OAC rule 3745-18-06(D)	Sulfur dioxide (SO ₂) emissions shall not exceed 1.6 lbs/mmBtu actual heat input.
d.	OAC rule 3745-110-03(A)	See d)(4) below.
e.	40 CFR Part 63, Subpart JJJJJJ	See b)(2)a., c)(3), d)(5), and e)(3) below.

(2) Additional Terms and Conditions

a. This emissions unit is not subject to the requirements 40 CFR Part 63, Subpart JJJJJJ while burning fuel oil during periods of gas curtailment, gas supply emergencies, or periodic testing on fuel oil.



c) Operational Restrictions

- (1) The permittee shall only burn natural gas and/or number two fuel oil in this emissions unit.

[Authority for term: OAC rules 3745-77-07(A)(1)]

- (2) The quality of the oil burned in this emissions unit shall have a combination of sulfur content and heat content that is sufficient to comply with the allowable sulfur dioxide emission limitation specified in b)(1)c. above.

[Authority for term: OAC rule 3745-77-07(A)(1)]

- (3) Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year.

[Authority for term: OAC rule 3745-77-07(A)(1)]

d) Monitoring and/or Recordkeeping Requirements

- (1) For each day during which the permittee burns a fuel other than natural gas and/or number two fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (2) For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).). A shipment may be comprised of multiple tank truck loads from the same supplier's batch and the quality of the oil for those loads or may be represented by a single batch analysis from the supplier.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (3) The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240, and D4294), or equivalent methods as approved by the Cleveland Division of Air Quality (Cleveland DAQ).

[Authority for term: OAC rule 3745-77-07(C)(1) and 3745-18-04(A)]

- (4) The owner or operator of a small boiler must annually perform a tune-up and maintain, in a permanently bound log book, or other format approved in writing by the director the following information:



- a. the date of the last tune-up;
- b. the name, title and affiliation of the person who performed the tune-up and made any adjustments; and
- c. any other information which the Ohio Environmental Protection Agency may require as a condition of approval of any permit for the boiler.

[Authority for term: OAC rules 3745-77-07(A)(3) and 3745-110-03(A)]

- (5) The permittee shall maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas and/or number two fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (2) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation based upon the calculated sulfur dioxide emission rates from d) above. The notification shall include a copy of such record and shall be sent to the Cleveland DAQ within 45 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (3) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emission Limitation:

Visible particulate emissions shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-17-03(B)(1)(a)]

b. Emission Limitation:

PE shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

When firing number two fuel oil, compliance may be determined by multiplying an emission factor of 2.0 pounds of particulates/1,000 gallons of oil fired by the emissions unit's maximum hourly fuel oil firing capacity (323.2 gallons/hour) and dividing by the emissions unit's rated heat input capacity (45.4 mmBtu/hour). This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.3, Table 1.3-1 (9/98).

When firing natural gas, compliance may be determined by multiplying an emission factor of 1.9 pounds of particulates/mmscf by the emissions unit's maximum hourly natural gas firing capacity (0.0454 mmscf/hour) and dividing by the emissions unit's rated heat input capacity (45.4 mmBtu/hour). This emission factor is specified in U.S. EPA reference document AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Section 1.4, Table 1.4-2 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(9), while firing number two fuel oil.

[Authority for term: OAC rules 3745-77-07(C)(1) and 3745-17-10(B)(1)]

c. Emission Limitation:

SO₂ emissions shall not exceed 1.6 lbs/mmBtu actual heat input.

Applicable Compliance Method:

When firing fuel oil, compliance with the allowable sulfur dioxide emission limitation may be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation, as required in d) above.



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Effective Date: To be entered upon final issuance

When firing natural gas, compliance with this limitation will be assumed due to the negligible percent sulfur, by weight, in the fuel.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6, while firing number two fuel oil.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-18-04(A), and 3745-18-06(D)]

g) Miscellaneous Requirements

- (1) Emissions unit B014 was installed 6/1/1948.
- (2) Emissions unit B015 was installed 6/1/1948.



19. B038, Boiler #3 and B039, Boiler #4

Operations, Property and/or Equipment Description:

B038, Boiler #3	41.97 mmBtu/hr natural gas/#2 fuel oil (back-up fuel source) fired boiler equipped with low NOx burners and flue gas recirculation
B039, Boiler #4	41.97 mmBtu/hr natural gas/#2 fuel oil (back-up fuel source) fired boiler equipped with low NOx burners and flue gas recirculation

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/01 PTI P0106967 (B038) and PTI P0106966 (B039) issued 3/9/2011.	When burning natural gas: Nitrogen oxides (NOx) emissions shall not exceed 1.34 pounds per hour and 5.87 tons per year (TPY). Particulate emissions (PE) shall not exceed 0.32 pound per hour and 1.40 TPY. Organic compound (OC) emissions shall not exceed 0.46 pound per hour and 2.01 TPY. Volatile organic compound (VOC) emissions shall not exceed 0.23 pound per hour and 1.01 TPY. When burning No. 2 Fuel Oil: NOx emissions shall not exceed 5.96 pounds per hour.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		PE shall not exceed 0.6 pound per hour. Carbon monoxide (CO) emissions shall not exceed 1.5 pounds per hour. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-10(B), OAC rule 3745-31-05(D), and 40 CFR Part 60, Subpart Dc. See b)(2)b. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/06	See b)(2)c. below.
c.	OAC rule 3745-31-05(D) Synthetic minor to avoid PSD	See b)(2)d. and c)(3) below.
d.	Ohio Revised Code (ORC) rule 3704.03(T)	When burning natural gas: CO emissions shall not exceed 0.08 lb/mmBtu. When burning No. 2 Fuel Oil: SO ₂ emissions shall not exceed 0.50 lb /mmBtu
e.	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation specified by this rule is less stringent than the visible particulate emission limitation established pursuant to 40 CFR Part 60 Subpart Dc.
f.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu
g.	OAC rule 3745-18-06(D)	When burning No. 2 fuel oil, the SO ₂ emissions limitation specified by this rule is less stringent than the SO ₂ emission limitation established pursuant to 40 CFR Part 60 Subpart Dc.
h.	OAC rule 3745-110-03(A)	See d)(3) below.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
i.	40 CFR Part 60 Subpart Dc	SO ₂ emissions shall not exceed 0.50 lb/mmBtu when burning No. 2 fuel oil. Visible particulate emissions from any stack shall not exceed twenty per cent opacity, as a six-minute average, except for one 6- minute period per hour of not more than 27% opacity.
j.	40 CFR Part 63, Subpart JJJJJJ	See b)(2)f., c)(4), d)(4), and e)(6) below.

(2) Additional Terms and Conditions

- a. The application and enforcement of the provisions of the New Source Performance Standards (NSPS), as promulgated by the United States Environmental Protection Agency (U.S. EPA), 40 CFR Part 60, are delegated to the Ohio Environmental Protection Agency (Ohio EPA).
- b. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001 in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to ORC changes effective August 3, 2006 (S.B. 265 changes). Such that BAT is no longer required by State regulations for NAAQS pollutant less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio’s State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of 3745-31-05, then these emission limits/control measures no longer apply.
- c. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE, OC, VOC, or NOx emissions while (burning natural gas) from this air contaminant source since the uncontrolled potential to emit for PE, OC, VOC, or NOx emissions is less than 10 tons per year, and the calculated annual emission rate for PE, CO and NOx (while burning No. 2 fuel oil) is less than 10 tons per year taking into account the federally enforceable annual usage restriction of 580,000 gallons.



- d. When burning No. 2 fuel oil, the emissions from this unit as a rolling, 12-month summation, shall not exceed the following:
 - NOx 5.8 TPY
 - CO 1.45 TPY
 - PE 0.58 TPY (includes both PM₁₀ and PM_{2.5}); and
 - SO₂ 12.35 TPY
- e. The quality of the oil burned in this emissions unit shall meet the following specifications on an "as received " basis:
 - i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.5 pounds sulfur dioxide/mmBtu actual heat input; and
 - ii. greater than 140,000 Btu/gallon of oil.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.
- f. This emissions unit is not subject to the requirements 40 CFR Part 63, Subpart JJJJJJ while burning fuel during periods of gas curtailment, gas supply emergencies, or periodic testing on fuel oil.

c) Operational Restrictions

- (1) The permittee shall burn only natural gas and/or No. 2 fuel oil in this emissions unit.
 [Authority for term: OAC rule 3745-77-07(A)(1) and PTIs P0106966 and P0106967]
- (2) The quality of No. 2 fuel oil received for burning in this emissions unit shall have a combination of sulfur content and heat content sufficient to comply with the allowable sulfur dioxide emission limitation of 0.50 lb/mmBtu of actual heat input and the sulfur content limitation for No. 2 fuel oil of less than or equal to 0.3 per cent sulfur.
 [Authority for term: OAC rule 3745-77-07(A)(1) and PTIs P0106966 and P0106967]
- (3) The maximum annual No. 2 fuel oil usage rate for this emissions unit shall not exceed 580,000 gallons based upon a rolling, 12-month summation of the gallons consumed.
 [Authority for term: OAC rule 3745-77-07(A)(1) and PTIs P0106966 and P0106967]
- (4) Periodic testing of the fuel oil shall not exceed 48 hours during any calendar year.
 [Authority for term: OAC rule 3745-77-07(A)(1)]



d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain records of the oil burned in this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

a. Alternative 1:

For each shipment of oil received for burning in this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of oil and maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lb/mmBtu). [The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F)].

A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.

b. Alternative 2:

The permittee shall collect a representative grab sample of oil that is burned in this emissions unit for each day when the emissions unit is in operation. If additional fuel oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to develop a composite sample representative of the fuel oil burned in this emissions unit. A representative grab sample of oil does not need to be collected on days when this emissions unit is only operated for the purpose of "test-firing." The permittee shall maintain records of the total quantity of oil burned each day, except for the purpose of test-firing, the permittee's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/MMBtu). The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F).

The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods, such as ASTM methods D240 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter and D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, or equivalent methods as approved by the Director.

c. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR Part 60, Appendix A, Method 19, or the appropriate ASTM methods (such as, ASTM methods D240 and D4294), or equivalent methods as approved by the Director.

[Authority for term: OAC rule 3745-77-07(A)(3) and PTIs P0106966 and P0106967]



- (2) The permittee shall maintain monthly records of the following information:
 - a. the total number of gallons of No. 2 fuel oil used in this boiler for each month;
 - b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the gallons of No. 2 fuel oil used; and
 - c. also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative gallons of No. 2 fuel oil burned for each calendar month.

[Authority for term: OAC rules 3745-77-07(A)(3) and PTIs P0106966 and P0106967]

- (3) The owner or operator of a small boiler must annually perform a tune-up and maintain, in a permanently bound log book, or other format approved in writing by the director the following information:
 - a. the date of the last tune-up;
 - b. the name, title and affiliation of the person who performed the tune-up and made any adjustments; and
 - c. any other information which the Ohio Environmental Protection Agency may require as a condition of approval of any permit for the boiler.

[Authority for term: OAC rules 3745-77-07(A)(3), 3745-110-03(A), and PTIs P0106966 and P0106967]

- (4) The permittee shall maintain annual records of the amount of time in minutes or hours when periodic testing is conducted while burning fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

- (1) Pursuant to the NSPS, the permittee is required to report the following information at the appropriate times (if the information has not already been reported):
 - a. construction date (no later than 30 days after such date);
 - b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
 - c. actual start-up date (within 15 days after such date); and
 - d. date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to the Cleveland Division of Air Quality (Cleveland DAQ) and to:



Ohio Environmental Protection Agency
 DAPC - Permit Management Unit
 P.O. Box 163669
 Columbus, Ohio 43216-3669

[Authority for term: OAC rule 3745-77-07(C)(1) and PTIs P0106966 and P0106967]

- (2) The permittee shall notify the Cleveland DAQ in writing of any fuel burned in this emissions unit other than natural gas or No. 2 fuel oil.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (3) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable sulfur dioxide emission limitation and/or sulfur content limitation based upon the record keeping requirements from d)(1) above.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (4) The notifications identified in e)(2) and e)(3) shall include a copy of such record and shall be sent to the Cleveland DAQ within 45 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (5) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
 - a. any exceedance of the allowable No. 2 fuel oil usage rate; and
 - b. any exceedance of the allowable 0.3 weight percent of sulfur for No. 2 fuel oil.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

[Authority for term: OAC rules 3745-77-07(C)(1) and PTIs P0106966 and P0106967]

- (6) The permittee shall notify the Cleveland DAQ in writing of any record which shows a deviation of the allowable 48 hour operating restriction while burning fuel oil during periodic testing.

[Authority for term: OAC rule 3745-77-07(C)(1)]

- (7) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTIs P0106966 and P0106967]



f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:

From Natural Gas Combustion

a. Emission Limitations:

NOx emissions shall not exceed 1.34 pounds per hour and 5.87 TPY

PE shall not exceed 0.32 pound per hour and 1.40 TPY

OC emissions shall not exceed 0.46 pound per hour and 2.01 TPY

VOC emissions shall not exceed 0.23 pound per hour and 1.01 TPY

Applicable Compliance Methods:

Compliance for each short term limit shall be based upon multiplying the maximum heat input (41.97 mmBtu/hr) by the appropriate AP-42 emission factor for each pollutant multiplied by the heating value of natural gas:

NOx - 32 lbs NOx/mmscf (LNB & flue gas recirculation AP-42 Table 1.4-1)

PE - 7.6 lbs PM/ mmscf (AP-42 Table 1.4-2)

OC - 11 lbs OC/mmscf (AP-42 Table 1.4-2)

VOC - 5.5 lbs OC/mmscf (AP-42 Table 1.4-2)

Natural Gas heating value - scf/1,000 Btu

Compliance with each annual limit shall be determined by multiplying the amount, in mmscf, of natural gas burned annually, by the appropriate AP-42 emission factor for each pollutant and dividing by 2,000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTIs P0106966 and P0106967]

From No. 2 Fuel Oil Combustion

b. Emission Limitations:

SO₂ emissions shall not exceed 12.35 TPY

PE shall not exceed 0.6 pound per hour and 0.58 TPY

CO emissions shall not exceed 1.5 pounds per hour and 1.45 TPY

NOx emissions shall not exceed 5.96 pounds per hour and 5.8 TPY



Applicable Compliance Methods:

Compliance with each short term limit shall be based upon multiplying the maximum gallons of No. 2 fuel oil used per hour by the appropriate AP-42 emission factor for each pollutant:

SO₂ - 142 * S/1,000 gallons (S = % sulfur content (AP-42 Table 1.3-1))

PM - 2 lbs PM/1,000 gallons (AP-42 Table 1.3-1)

CO - 5 lbs CO/ 1,000 gallons (AP-42 Table 1.3-1)

NO_x - 20 lbs NO_x/1,000 gallons (AP-42 Table 1.3-1)

Compliance with each annual limit shall be determined by multiplying the amount (in gallons) of No. 2 fuel oil burned annually, by the appropriate AP-42 emission factor for each pollutant and dividing by 2,000 lb/ton.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTIs P0106966 and P0106967]

c. Emission Limitation:

When burning natural gas, CO emissions shall not exceed 0.08 lb/mmBtu.

Applicable Compliance Methods:

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

[Authority for term: OAC rule 3745-77-07(C)(1), ORC rule 3704.03(T), and PTIs P0106966 and P0106967]

d. Emission Limitation:

When burning No. 2 fuel oil, SO₂ emissions shall not exceed 0.5 lb SO₂/mmBtu

Applicable Compliance Methods:

Continuous compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by documenting that the sulfur content of each shipment of oil received during a calendar month meets the limitation.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

Sulfur dioxide emissions from liquid fuel samples shall be calculated as follows:

$$ER = [(1 \times 10^6) / H] \times D \times S \times 1.974$$



where:

ER = the emission rate in pounds of sulfur dioxide per MMBtu;

H = the heat content of the liquid fuel in Btu per gallon;

D = the density of the liquid fuel in pounds per gallon; and

S = the decimal fraction of sulfur in the liquid fuel.

[Authority for term: OAC rule 3745-77-07(C)(1), ORC rule 3704.03(T), and PTIs P0106966 and P0106967]

e. Emission Limitation:

PE shall not exceed 0.020 lb/mmBtu.

Applicable Compliance Methods:

If required, the permittee shall demonstrate compliance with the lb/mmBtu emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 5.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-10(B)(1) and PTIs P0106966 and P0106967]

f. Emission Limitation:

Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except for one 6-minute period per hour of not more than 27% opacity.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-03(B)(1)(a), and PTIs P0106966 and P0106967]

g) Miscellaneous Requirements

(1) Potential to Emit (PTE) calculations from natural gas combustion:

a. NOx - with low NOx burners LNB:

$$41.97 \text{ mmBtu/hr} * 32 \text{ lbs NOx/ mmscf} * 1 \text{ scf/1,000Btu} = 1.34 \text{ lbs NOx/hr}$$

$$1.34 \text{ lbs NOx/hr} * 8,760\text{hr/year} * 1 \text{ ton/2000 lbs} = 5.87 \text{ TPY NOx}$$



- b. PM:
- $$41.97 \text{ mmBtu/hr} * 7.6 \text{ lbs PM/mmscf} * 1 \text{ scf/1,000Btu} = 0.32 \text{ lb PM/hr}$$
- $$0.32 \text{ lb PM/hr} * 8,760 \text{ hr/yr} * 1 \text{ ton/2,000 lbs} = 1.40 \text{ TPY PM}$$
- c. OC:
- $$41.97 \text{ mmBtu/hr} * 11 \text{ lbs OC/mmscf} * 1 \text{ scf/1,000Btu} = 0.46 \text{ lb OC/hr}$$
- $$0.46 \text{ lb OC/hr} * 8,760 \text{ hr/year} * 1 \text{ ton/2,000 lbs} = 2.01 \text{ TPY OC}$$
- d. VOC:
- $$41.97 \text{ mmBtu/hr} * 5.5 \text{ lbs VOC/mmscf} * 1 \text{ scf/1,000Btu} = 0.23 \text{ lb VOC/hr}$$
- $$0.23 \text{ lb VOC/hr} * 8,760 \text{ hr/year} * 1 \text{ ton/2,000 lbs} = 1.01 \text{ TPY VOC}$$

(2) Potential to Emit (PTE) calculations from No. 2 fuel oil combustion:

- a. CO:
- $$5 \text{ lbs CO/1,000 gal} * 580,000 \text{ gal/yr} * 1 \text{ ton/2,000 lbs} = 1.45 \text{ TPY CO}$$
- b. PE:
- $$2 \text{ lbs PM/ 1,000 gal} * 580,000 \text{ gal/yr} * 1 \text{ ton/2,000 lbs} = 0.58 \text{ TPY PM}$$
- c. SO₂:
- Emission factors from AP-42 (Table 1.3-1): $142 * S$ (S = % sulfur content)
- Sulfur content (S) = 0.3
- $$142 * 0.3 = 42.6 \text{ lbs SO}_2\text{/1,000 gal}$$
- $$42.6 \text{ lbs SO}_2\text{/1,000 gal} * 580,000 \text{ gal/yr} * 1 \text{ ton/2,000 lbs} = 12.35 \text{ TPY SO}_2$$