

Facility ID: 1409040987 Issuance type: Final State Permit To Operate

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In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1409040987 Emissions Unit ID: B001 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
B001-Cleaver Brookes Boiler No. 3	OAC rule 3745-31-05(A)(3) (PTI 14-05819)	Particulate emissions (PE) shall not exceed 0.014 lb/mmBtu and 0.89 ton per year (TPY). Particulate Matter emissions ten microns and less in diameter (PM10) shall not exceed 0.008 lb/mmBtu and 0.49 ton per year (TPY). Sulfur dioxide (SO2) emissions shall not exceed 0.51 lb/mmBtu and 31.94 TPY. Nitrogen oxides (NOx) emissions shall not exceed 0.14 lb/mmBtu and 8.95 TPY. Carbon Monoxide (CO) emissions shall not exceed 0.082 lb/mmBtu and 5.16 TPY. Organic Compound (OC) emissions shall not exceed 0.011 lb/mmBtu and 0.68 TPY. Visible particulate emissions from any stack shall not exceed 10% opacity, as a six minute average, except for one 6-minute period per hour of not more than 27% opacity. See sections B.1 and B.2. The requirements of this rule also include compliance with the requirements of OAC 3745-21-08(B), OAC rule 3745-18-06(D) and 40 CFR 60 Subpart Dc.
	OAC rule 3745-17-07(A)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-10(B)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-18-06(D)	When burning No. 2 fuel oil, the emissions limitation specified by this rule is less stringent than the emissions limitation pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-08(B)	See term A.2.d.
	40 CFR Part 60 Subpart Dc	See term A.2.b.

2. **Additional Terms and Conditions**

- (a) Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of natural gas or No. 2 fuel oil, a sulfur content limitation for No. 2 fuel oil, and the emissions limitations listed in section A.1 above.

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).

The lb/mmBtu actual heat input and tons per year emission limitations are based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping, and reporting requirements are necessary to ensure ongoing compliance with these emission limitations.

The permittee shall satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology (BAT) requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install. The design of the emissions unit and the technology associated with the current operating practices satisfy the BAT requirements.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

B. Operational Restrictions

1. The permittee shall burn only natural gas and/or No. 2 fuel oil in this emissions unit.
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 0.51 lb/mmBtu of actual heat input and the sulfur content limitation for No. 2 fuel oil of less than or equal to 0.5 weight percent sulfur.

C. Monitoring and/or Record Keeping 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.

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.

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 lb/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.

2. The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.
3. The permittee shall maintain monthly records of the following information:
 - a. The total volume of natural gas (mmft³) burned in this emissions unit.
 - b. The total number of gallons of No. 2 fuel oil used in this boiler for each month.

D. 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 appropriate local air agency or District Office and to:

Hamilton County Department of Environmental Services
250 William Howard Taft Road
Cincinnati, Ohio 45219

2. The permittee shall notify the Hamilton County Department of Environmental Services in writing of any fuel burned in this emissions unit other than natural gas or No. 2 fuel oil.
3. The permittee shall notify the Hamilton County Department of Environmental Services 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 section C.1 above.
4. The notifications identified in sections D.2 and D.3 shall include a copy of such record and shall be sent to the Hamilton County Department of Environmental Services within 45 days after the deviation occurs.

E. Testing Requirements

1. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 10% opacity, as a six minute average, except for one 6-minute period per hour of not more than 27% opacity.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

b. Emission Limitations:

Nitrogen oxides (NOx) emissions shall not exceed 0.14 lb/mmBtu and 8.95 TPY.

Applicable Compliance Method:

The emission limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (9/98). Compliance with the lb/mmBtu emission limitation may be determined by converting the 20 lbs of NOx/1000 gal emission factor into lb of NOx/mmBtu by dividing by 140 mmBtu/1000 gal. Compliance with the annual emission limitation may be demonstrated by multiplying the lb of NOx/mmBtu value by the maximum rated heat input capacity of the emissions unit (14.3 mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

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- 4, and 7.

c. Emission Limitations:

Carbon Monoxide (CO) emissions shall not exceed 0.082 lb/mmBtu and 5.16 TPY.

Applicable Compliance Method:

The emission limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-1 (7/98). Compliance with the lb/mmBtu emission limitation may be determined by converting the 84 lbs of CO/10⁶ scf emission factor into lb of CO/mmBtu by dividing by 1,020 Btu/scf. Compliance with the annual emission limitation may be demonstrated by multiplying the lb of CO/mmBtu value by the maximum rated heat input capacity of the emissions unit (14.3 mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

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

d. Emission Limitations:

Organic Compound (OC) emissions shall not exceed 0.011 lb/mmBtu and 0.68 TPY.

Applicable Compliance Method:

The emission limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.4, Table 1.4-2 (7/98). Compliance with the lb/mmBtu emission limitation may be determined by converting the 11 lbs of TOC/10⁶ scf emission factor into lb of TOC/mmBtu by dividing by 1,020 Btu/scf. Compliance with the annual emission limitation may be demonstrated by multiplying the lb of TOC/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

If required, the permittee shall demonstrate compliance with the lb/mmBtu emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1- 4, and 25.

e. Emission Limitations:

Sulfur dioxide (SO2) emissions shall not exceed 0.51 lb/mmBtu and 31.94 TPY.

Applicable Compliance Method:

The emissions limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (9/98). Compliance with the lb/mmBtu emission limitation shall be based upon the record keeping in term C.1 and shall be determined in accordance with the following formula, as specified in OAC rule 3745-18-04(F):

$ER = (1 \times 10^6) / H \times D \times S \times 1.974$, where:

ER = the emission rate in pounds of SO2/mmBtu;
 H = the heat content of the No. 2 fuel oil in Btu/gallon;
 D = the density of the No. 2 fuel oil in lb/gallon; and
 S = the decimal fraction of sulfur in the No. 2 fuel oil.

Compliance with the annual emission limitation shall be determined by multiplying the annual average lb SO2/mmBtu value by the annual average heat content and the total gallons of No. 2 fuel oil burned, and then dividing by 2000 lbs/ton.

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- 4, and 6.

f. Emission Limitations:

Particulate emissions (PE) shall not exceed 0.014 lb/mmBtu and 0.89 ton per year (TPY).

Applicable Compliance Method:

The emission limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant

Emission Factors", 5th Edition, Section 1.3, Table 1.3-1 (9/98). Compliance with the lb/mmBtu emission limitation may be determined by converting the 2 lbs of PE/1000 gal emission factor into lbs of PE/mmBtu by dividing by 140 mmBtu/1000 gal. Compliance with the annual emission limitation may be demonstrated by multiplying the lb of PE/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

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.

g. Emission Limitations:

Particulate Matter emissions ten microns and less in diameter (PM10) shall not exceed 0.008 lb/mmBtu and 0.49 ton per year (TPY).

Applicable Compliance Method:

The emission limitations were based upon the emission factor from AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, Section 1.3, Table 1.3-7 (9/98). Compliance with the lb/mmBtu emission limitation may be determined by converting the 1.1 lbs of PM10/1000gal emission factor into lbs of PM10/mmBtu by dividing by 140 mmBtu/1000 gal. Compliance with the annual emission limitation may be demonstrated by multiplying the lb of PM10/mmBtu value by the maximum rated heat input capacity of the emissions unit (in mmBtu/hr), then multiplying by 8760 hrs/yr and dividing by 2000 lbs/ton.

h. Sulfur Content Limitation:

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 0.51 lb/mmBtu of actual heat input and the sulfur content limitation for No. 2 fuel oil of less than or equal to 0.5 weight percent sulfur.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirement described in section C.1.

F. **Miscellaneous Requirements**

1. None