

Synthetic Minor Determination and/or Netting Determination

Permit To Install 02-19776

A. Source Description

B009 is a 8.5 mmBtu/hr atmospheric fluidized bed combustor and boiler. Source previously approved in PTI No. 02-2745 (issued on May 12, 1999) and modified in PTI No. 02-17358 (issued on May 1, 2003). B002 is an Erie City 5.56 mmBtu/hr coal-fired underfeed stoker/boiler previously approved in PTI No. 02-2745. B005 is a Burnhan 5.6 mmBtu/hr coal-fired underfeed stoker/boiler previously approved in PTI No. 02-2745.

B. Facility Emissions and Attainment Status

Cedar Lane Farms Corporation is a greenhouse whose only air pollution sources are boilers used for steam and hot water for space heating purposes. Operating emissions at this facility are 2 natural gas boilers (permit exempt), and three permitted coal-fired boilers (B002, B005 & B009).

This greenhouse is located in Wooster, Ohio and is an existing/permitted source for SO₂, NO_x, CO and PE. The siting of this source (Wooster, Ohio) is in Wayne County which is designated as an attainment area for all criteria pollutants.

C. Source Emissions

SO₂ emissions from this facility have the potential to exceed the major source threshold of 100 tpy and would subject this greenhouse to Title V permitting requirements. The maximum potential emissions of SO₂ from B002, B005 and B009 operating unrestricted is be 279.3 tpy using maximum coal usage and 296.5 tpy using operation at maximum capacity. However, given the restrictions in this PTI, the allowable SO₂ limit for these emissions units (B002, B005 & B009) is 98.3 tons per year. Maximum facility SO₂ allowable emissions, including the two natural gas boilers, is 98.6 tons per year.

D. Conclusion

NEDO believes that the operational restrictions placed on these three emissions units (B002, B005 & B009) will effectively limit this facility to "synthetic minor" status with regards to SO₂ emissions. The facility is a minor source for other air pollutants.



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL
WAYNE COUNTY**

CERTIFIED MAIL

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov.
Center

Application No: 02-19776

Fac ID: 0285030221

DATE: 10/12/2004

Cedar Lane Farms Corp
Tom Machamer
5713 Back Orrville Rd
Wooster, OH 44691

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$600** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

cc: USEPA

NEDO

WAYNE COUNTY

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL 02-19776 FOR AN AIR CONTAMINANT SOURCE FOR
Cedar Lane Farms Corp

On 10/12/2004 the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Cedar Lane Farms Corp**, located at **5713 Back Orrville Rd, Wooster, Ohio**.

Installation of the air contaminant source identified below may proceed upon final issuance of Permit To Install 02-19776:

8.5 mmBtu/hr Atmospheric Fluidized Bed Combuster.

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Dennis Bush, Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, OH 44087
[(330)425-9171]



**Permit To Install
Terms and Conditions**

**Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 02-19776

Application Number: 02-19776
Facility ID: 0285030221
Permit Fee: **To be entered upon final issuance**
Name of Facility: Cedar Lane Farms Corp
Person to Contact: Tom Machamer
Address: 5713 Back Orrville Rd
Wooster, OH 44691

Location of proposed air contaminant source(s) [emissions unit(s)]:

**5713 Back Orrville Rd
Wooster, Ohio**

Description of proposed emissions unit(s):

8.5 mmBtu/hr Atmospheric Fluidized Bed Combuster.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Cedar Lane Farms Corp

Facility ID: 0285030221

PTI Application: 02-19776

Issued: To be entered upon final issuance

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any

Cedar Lane Farms Corp
PTI Application: 02-19776

Facility ID: 0285030221

Issued: To be entered upon final issuance

information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

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If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

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14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
SO2	98.3
NOx	10.6
CO	12.6
PE	11.9

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operations(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 specified in narrative form following the table.

Operations, Property,
and/or Equipment

Applicable Rules/Requirements

B002 - Erie City 5.56 mmBtu/hour coal-fired, underfeed stoker/boiler OAC rule 3745-31-05(A)(3)

OAC rule 3745-17-07(A)

OAC rule 3745-17-10(C)(2)

OAC rule 3745-31-05(C)

Applicable Emissions
Limitations/Control Measures

Sulfur dioxide (SO₂):
5.4 lbs/mmBtu

Nitrogen Oxides (NO_x):
1.9 lbs/hour

Carbon Monoxide (CO):
2.2 lbs/hour

Particulates (PE):
0.6 lb/mmBtu and 3.0 lbs/hour

Quality of coal:
See Section A.I.2.c

The requirements of this rule also include compliance with OAC rule 3745-31-05(C) and OAC rule 3745-17-07(A).

Amount of coal usage limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 & B009.

SO₂: 98.3 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.

NO_x: 10.6 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.

CO: 12.6 tons/year, on a 12-month rolling basis, for emissions units

B002, B005 & B009.

PE: 11.9 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.

See Section A.I.2.d

See Section A.I.2.a and & b.

The particulate emissions limitation specified by this rule is equivalent to the particulate emissions limitation established by OAC rule 3745-31-05(A)(3).

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

2.a This emissions unit shall comply with the following visible particulate emissions limits:

- i. The visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed an opacity of twenty (20) percent as a six-minute average.
- ii. The visible particulate emissions from the stack may exceed twenty (20) percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time.

2.b The visible particulate emission limitations specified by OAC rule 3745-17-07(A) shall not apply to the following operations, provided the operations are documented daily in a boiler operations log kept at the facility. The log shall clearly document the date, beginning time, and ending time of the exempted operations listed below.

- i. The start-up of the source for a period of time required to achieve stable combustion conditions, but no more than three (3) hours from the moment of start-up. "Start-up" means the commencement of firing of fuel from a cold non-fired condition.
- ii. The shutdown of the source for a period of not more than three (3) hours.
- iii. The malfunction of the source or associated equipment, if the owner of the source or operator of the equipment complies with the requirements of OAC rule 3745-15-06.
- iv. Intermittent soot blowing operations (the cleaning of heat transfer surfaces with pressurized air or steam).
- v. Intermittent ash removal operations (the dumping or pulling of ash).
- vi. The commencement of increased coal firing from a banked condition for a period not to exceed thirty (30) minutes. "Banked condition" means the condition where the fuel is burned on the grates at rates which are sufficient to maintain ignition only.

2.c The coal received for use in this emissions unit will have an ash content of less than 8.0 percent by weight, a heat content of greater than thirteen thousand BTU per pound, and a percent sulfur content no greater than 3.70 %. Ash content, heat content, and sulfur content shall be determined on a dry basis in accordance with the procedures specified in

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OAC rule 3745-17-03(B)(9).

- 2.d** The coal usage restriction of 1,400 tons/year on a 12-month rolling basis pertains to all coal used in emissions units B002, B005, and B009. The annual limits for SO₂, NO_x, CO and PE on a 12-month rolling basis, are combined for emissions units B002, B005 and B009.

B. Operational Restrictions

1. Amount of coal usage is limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 and B009.
2. During the first twelve (12) months of operation under this permit, emissions units B002, B005 and B009 shall not exceed the cumulative total amount of coal usage as specified for each month in the following table:

<u>Calendar Month</u>	<u>Cumulative Allowable Amount of Coal Usage, in tons</u>
1	175
2	350
3	525
4	700
5	875
6	1,050
7	1,225
8	1,400
9	1,400
10	1,400
11	1,400
12	1,400

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain a operation log for this emissions unit. This operations log shall contain, at minimum, the following information:
 - a. The dates and times of any start-up and shutdown of this emissions unit;
 - b. The duration (in minutes) of the exempted operations listed in Section A.2.b;
 - c. The number of hours of normal or full firing is to be recorded for each day of operation;

Emissions Unit ID: **B002**

- d. The number of hours of banked condition is to be recorded for each day of operation;
 - e. The total number of hours of operation, i.e., the summation of (c) & (d);
 - f. The amount of coal (in tons) fed to and burned in this emissions unit each day;
 - g. The dates and times of any malfunction of this emissions unit and any corrective action taken;
2. For each shipment of coal to be burned in this emissions unit, the permittee shall record the following information:
 - a. The name of the coal supplier;
 - b. The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The report shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
 - c. The total quantity (in tons) of coal received;
 - d. The sulfur content (in percent) of the coal on a dry basis;
 - e. The moisture content of the coal on a dry basis;
 - f. The ash content (in percent) of the coal on a dry basis;
 - g. The heat content (BTU per pound) of the coal on a dry basis;
 - h. The methods used to determine the properties of the coal.
 3. The permittee shall maintain the following monthly records for this emissions unit, when in operation:
 - a. The sulfur dioxide emissions rate, in pounds sulfur dioxide per mmBtu, as calculated by the equation found in OAC rule 3745-18-04(F).

$$ER = 1,000,000/H \times S \times 1.9.$$

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where;

ER = Emissions rate in pounds sulfur dioxide per mmBtu (lbs/mmBtu)

H = Heating capacity of the coal, in Btu per pound (Btu/lb), on a dry basis

S = Percent sulfur content of the coal, expressed as a decimal, on a dry basis

- b. The average, hourly nitrogen oxides (NO_x), carbon monoxide (CO) and particulate (PE) emissions rates by use of the following equation, when this emissions unit is in operation.

$$ER = \frac{EF \times \text{Coal}}{\text{Hours}}$$

where;

ER = Emissions rate in pounds per hour

EF = Emissions Factor, taken from AP-42 Tables 1.1-3 & 4 as follows:

NO_x = 9.5 lbs NO_x/ton of coal

CO = 11 lbs CO/ton of coal

PE = 15 lbs PE/ton of coal

Coal = The amount of coal (in tons) fed to the emissions unit and burned that day, as recorded in Section C.1.f.

Hours = The total number of hours of operation (total of both full firing and banked), as recorded in Section C.1. e, for the entire month.

- c. The particulate emissions rate, in pounds per mmBtu, as calculated by the following equation.

$$ER = PE \text{ Hr} / \text{HC}$$

where;

ER = Emissions rate in pounds particulate per mmBtu

PE Hr = Particulate hourly emissions rate (lbs PE/hr) as calculated in Section C.3.b.

HC = Maximum heating capacity of emissions unit, in mmBtu per hour

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4. The permittee shall maintain the following monthly records regarding coal usage for emissions units B002, B005 and B009:
- The total amount of coal, in tons, fed to and burned in emissions units B002 and B005.
 - The total amount of coal, in tons, fed to and burned in emissions unit B009.
 - The cumulative, total amount of coal, in tons, fed to and burned in emissions units B002 and B005 for the past 12-months.
 - The cumulative, total amount of coal, in tons, fed to and burned in emissions unit B009 for the past 12-months
5. The permittee shall maintain the following monthly records regarding emissions rates for emissions units B002, B005 and B009:
- The cumulative sulfur dioxide emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 140.4 \text{ lbs SO}_2/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 23.4 \text{ lbs SO}_2/\text{ton} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons sulfur dioxide per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"140.4 lbs SO₂/ton" is the converted value in lbs/ton from 5.4 lbs SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate. Per AP-42 Chapter 1.15, the conversion is performed by multiplying 5.4 lbs SO₂/mmBtu with 26.0 mmBtu/ton to produce 140.4 lbs SO₂/ton.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"23.4 lbs SO₂/ton" is the converted value in lbs/ton from 0.9 lb SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate.

Emissions Unit ID: **B002**

- b. The cumulative NO_x emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 9.5 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 15.2 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons NO}_x \text{ per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"9.5 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"15.2 lbs NO_x/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- c. The cumulative CO emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 11 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 18 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons CO per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"11 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

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"18 lbs CO/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- d. The cumulative PE emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 15 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 17 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs} \times (0.07)]$$

where;

$$ER = \text{Emissions rate, in tons PE per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"15 lbs PE/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-4.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"17 lbs PE/ton of coal" is an emissions factor, taken from AP-42, Table 1.1-4.

"(0.07)" is the result of (1 minus control efficiency of baghouse, which is 93% or 0.93).

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which include the following information:
 - a. An identification of each day during which the hourly emissions limitation(s) for NO_x, CO and/or PE was/were exceeded, and the actual hourly emissions rate for the applicable pollutant(s);
 - b. An identification of each day during which the sulfur dioxide emissions limitation (in lbs SO₂/mmBtu) and/or the particulate emissions limitation (lbs PE/mmBtu) was/were exceeded, and the actual emissions rate(s) for the applicable pollutant(s);
 - c. An identification of each day during which the visible particulate emissions from the exhaust serving this emissions unit exceeded the limitations specified in OAC rules

3745-17-07(A)(1) & (A)(2).

- d. An identification of any shipment of coal used for this emissions unit that did not meet the ash, heat, and sulfur specifications listed in Section A.2.c.
- e. An identification of each day during which any required monitoring and record keeping as listed in Section C was not performed.
- g. An identification of each month within the quarter when the total amount of coal used over the past 12 months in emissions units B002, B005 and B009 exceeds 1,400 tons. The actual total amount of coal for each such month shall be reported.
- h. An identification of each month within the quarter when the calculated annual SO₂, NO_x, CO and PE emissions rates, as recorded per Section C.5, exceeds the appropriate allowable limit. The actual, calculated annual emissions rates for these pollutants shall also be reported.

The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

- 2. If no deviations occurred during the calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

E. Testing Requirements

- 1. Emissions Limitation:
5.4 lbs SO₂/mmBtu for B002

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.a.

If required by the Ohio EPA, compliance may be determined in accordance with 40 CFR Part 60, Appendix A, Method 6C.

- 2. Emissions Limitation:
98.3 tons SO₂/rolling 12-months for B002, B005 & B009

Applicable Compliance Method:

Issued: To be entered upon final issuance

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.a.

3. Emissions Limitation:
1.9 lbs NO_x/hour for B002

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.

4. Emissions Limitation:
10.6 tons NO_x per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.b.

5. Emissions Limitation:
2.2 lbs CO/hour for B002

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.

6. Emissions Limitation:
12.6 tons CO per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.c.

7. Emissions Limitation:
0.6 lb PE/mmBtu for B002

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.c.

8. Emissions Limitation:
3.0 lbs PE/hr for B002

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Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.

9. Emissions Limitation:
11.9 tons PE per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.d.

10. Emissions Limitation:
Visible particulate emissions (VE) shall not exceed an opacity of twenty (20) percent as a six-minute average. VE may exceed 20 percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time. This emissions limitation applies, except as exempted by OAC rule 3745-17-07(A)(3).

Applicable Compliance Method:

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

F. Miscellaneous Requirements

1. The terms and conditions of this permit supercede those for B002 established in PTI # 02-2745.
2. The terms and conditions of this permit to install are federally enforceable.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(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 specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B005 - Burnhan 5.6 mmBtu/hour coal-fired underfeed stoker/boiler	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)(1)
	OAC rule 3745-17-10(C)(2)
	OAC rule 3745-31-05(C)

**Cedar
PTI A**

Emissions Unit ID: **B005**

Issued: To be entered upon final issuance

Applicable Emissions <u>Limitations/Control Measures</u>	
Sulfur dioxide (SO ₂): 5.4 lbs/mmBtu	B002, B005 & B009. PE: 11.9 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.
Nitrogen Oxides (NO _x): 1.9 lbs/hour	See Section A.I.2.d See Section A.I.2.a and & b.
Carbon Monoxide (CO): 2.2 lbs/hour	The particulate emissions limitation specified by this rule is equivalent to the particulate emissions limitation established by OAC rule 3745-31-05(A)(3).
Particulates (PE): 0.6 lb/mmBtu and 3.0 lbs/hour	
Quality of coal: See Section A.I.2.c	
The requirements of this rule also include compliance with OAC rule 3745-31-05(C) and OAC rule 3745-17-07(A).	
Amount of coal usage limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 & B009.	
SO ₂ : 98.3 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.	
NO _x : 10.6 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.	
CO: 12.6 tons/year, on a 12-month rolling basis, for emissions units	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

2.a This emissions unit shall comply with the following visible particulate emissions limits:

- i. The visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed an opacity of twenty (20) percent as a six-minute average.
- ii. The visible particulate emissions from the stack may exceed twenty (20) percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time.

2.b The visible particulate emission limitations specified by OAC rule 3745-17-07(A) shall not apply to the following operations, provided the operations are documented daily in a boiler operations log kept at the facility. The log shall clearly document the date, beginning time, and ending time of the exempted operations listed below.

- i. The start-up of the source for a period of time required to achieve stable combustion conditions, but no more than three (3) hours from the moment of start-up. "Start-up" means the commencement of firing of fuel from a cold non-fired condition.
- ii. The shutdown of the source for a period of not more than three (3) hours.
- iii. The malfunction of the source or associated equipment, if the owner of the source or operator of the equipment complies with the requirements of OAC rule 3745-15-06.
- iv. Intermittent soot blowing operations (the cleaning of heat transfer surfaces with pressurized air or steam).
- v. Intermittent ash removal operations (the dumping or pulling of ash).
- vi. The commencement of increased coal firing from a banked condition for a period not to exceed thirty (30) minutes. "Banked condition" means the condition where the fuel is burned on the grates at rates which are sufficient to maintain ignition only.

2.c The coal received for use in this emissions unit will have an ash content of less than 8.0 percent by weight, a heat content of greater than thirteen thousand BTU per pound, and a percent sulfur content no greater than 3.70 %. Ash content, heat content, and sulfur content shall be determined on a dry basis in accordance with the procedures specified in

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OAC rule 3745-17-03(B)(9).

- 2.d** The coal usage restriction of 1,400 tons/year on a 12-month rolling basis pertains to all coal used in emissions units B002, B005, and B009. The annual limits for SO₂, NO_x, CO and PE on a 12-month rolling basis, are combined for emissions units B002, B005 and B009.

B. Operational Restrictions

1. Amount of coal usage is limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 and B009.
2. During the first twelve (12) months of operation under this permit, emissions units B002, B005 and B009 shall not exceed the cumulative total amount of coal usage as specified for each month in the following table:

<u>Calendar Month</u>	<u>Cumulative Allowable Amount of Coal Usage, in tons</u>
1	175
2	350
3	525
4	700
5	875
6	1,050
7	1,225
8	1,400
9	1,400
10	1,400
11	1,400
12	1,400

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain a operations log for this emissions unit. This operations log shall contain, at minimum, the following information:
 - a. The dates and times of any start-up and shutdown of this emissions unit;
 - b. The duration (in minutes) of the exempted operations listed in Section A.2.b;
 - c. The number of hours of normal or full firing is to be recorded for each day of operation;

Emissions Unit ID: **B005**

- d. The number of hours of banked condition is to be recorded for each day of operation;
 - e. The total number of hours of operation, i.e., the summation of (c) & (d);
 - f. The amount of coal (in tons) fed to and burned in this emissions unit each day;
 - g. The dates and times of any malfunction of this emissions unit and any corrective action taken;
2. For each shipment of coal to be burned in this emissions unit, the permittee shall record the following information:
 - a. The name of the coal supplier;
 - b. The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The report shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
 - c. The total quantity (in tons) of coal received;
 - d. The sulfur content (in percent) of the coal on a dry basis;
 - e. The moisture content of the coal on a dry basis;
 - f. The ash content (in percent) of the coal on a dry basis;
 - g. The heat content (BTU per pound) of the coal on a dry basis;
 - h. The methods used to determine the properties of the coal.
 3. The permittee shall maintain the following monthly records for this emissions unit, when in operation:
 - a. The sulfur dioxide emissions rate, in pounds sulfur dioxide per mmBtu, as calculated by the equation found in OAC rule 3745-18-04(F).

$$ER = 1,000,000/H \times S \times 1.9.$$

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where;

ER = Emissions rate in pounds sulfur dioxide per mmBtu (lbs/mmBtu)

H = Heating capacity of the coal, in Btu per pound (Btu/lb), on a dry basis

S = Percent sulfur content of the coal, expressed as a decimal, on a dry basis

- b. The average, hourly nitrogen oxides (NO_x), carbon monoxide (CO) and particulate (PE) emissions rates by use of the following equation, when this emissions unit is in operation.

$$ER = \frac{EF \times \text{Coal}}{\text{Hours}}$$

where;

ER = Emissions rate in pounds per hour

EF = Emissions Factor, taken from AP-42 Tables 1.1-3 & 4 as follows:

NO_x = 9.5 lbs NO_x/ton of coal

CO = 11 lbs CO/ton of coal

PE = 15 lbs PE/ton of coal

Coal = The amount of coal (in tons) fed to the emissions unit and burned that day, as recorded in Section C.1.f.

Hours = The total number of hours of operation (total of both full firing and banked), as recorded in Section C.1. e, for the entire month.

- c. The particulate emissions rate, in pounds per mmBtu, as calculated by the following equation.

$$ER = PE \text{ Hr} / HC$$

where;

ER = Emissions rate in pounds particulate per mmBtu

PE Hr = Particulate hourly emissions rate (lbs PE/hr) as calculated in Section C.3.b.

HC = Maximum heating capacity of emissions unit, in mmBtu per hour

4. The permittee shall maintain the following monthly records regarding coal usage for emissions units B002, B005 and B009:
- a. The total amount of coal, in tons, fed to and burned in emissions units B002 and B005.
 - b. The total amount of coal, in tons, fed to and burned in emissions unit B009.
 - c. The cumulative, total amount of coal, in tons, fed to and burned in emissions units B002 and B005 for the past 12-months.
 - d. The cumulative, total amount of coal, in tons, fed to and burned in emissions unit B009 for the past 12-months
5. The permittee shall maintain the following monthly records regarding emissions rates for emissions units B002, B005 and B009:
- a. The cumulative sulfur dioxide emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = \frac{[\text{Coal amt from B002 \& B005} \times 140.4 \text{ lbs SO}_2/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 23.4 \text{ lbs SO}_2/\text{ton} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons sulfur dioxide per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"140.4 lbs SO₂/ton" is the converted value in lbs/ton from 5.4 lbs SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate. Per AP-42 Chapter 1.15, the conversion is performed by multiplying 5.4 lbs SO₂/mmBtu with 26.0 mmBtu/ton to produce 140.4 lbs SO₂/ton.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"23.4 lbs SO₂/ton" is the converted value in lbs/ton from 0.9 lb SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate.

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- b. The cumulative NO_x emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 9.5 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 15.2 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons NO}_x \text{ per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"9.5 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"15.2 lbs NO_x/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- c. The cumulative CO emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 11 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 18 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons CO per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"11 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

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"18 lbs CO/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- d. The cumulative PE emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 15 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 17 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs} \times (0.07)]$$

where;

$$ER = \text{Emissions rate, in tons PE per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"15 lbs PE/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-4.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"17 lbs PE/ton of coal" is an emissions factor, taken from AP-42, Table 1.1-4.

"(0.07)" is the result of (1 minus control efficiency of baghouse, which is 93% or 0.93).

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which include the following information:
 - a. An identification of each day during which the hourly emissions limitation(s) for NO_x, CO and/or PE was/were exceeded, and the actual hourly emissions rate for the applicable pollutant(s);
 - b. An identification of each day during which the sulfur dioxide emissions limitation (in lbs SO₂/mmBtu) and/or the particulate emissions limitation (lbs PE/mmBtu) was/were exceeded, and the actual emissions rate(s) for the applicable pollutant(s);
 - c. An identification of each day during which the visible particulate emissions from the exhaust serving this emissions unit exceeded the limitations specified in OAC rules

3745-17-07(A)(1) & (A)(2).

- d. An identification of any shipment of coal used for this emissions unit that did not meet the ash, heat, and sulfur specifications listed in Section A.2.c.
- e. An identification of each day during which any required monitoring and record keeping as listed in Section C was not performed.
- g. An identification of each month within the quarter when the total amount of coal used over the past 12 months in emissions units B002, B005 and B009 exceeds 1,400 tons. The actual total amount of coal for each such month shall be reported.
- h. An identification of each month within the quarter when the calculated annual SO₂, NO_x, CO and PE emissions rates, as recorded per Section C.5, exceeds the appropriate allowable limit. The actual, calculated annual emissions rates for these pollutants shall also be reported.

The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

- 2. If no deviations occurred during the calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

E. Testing Requirements

- 1. Emissions Limitation:
5.4 lbs SO₂/mmBtu for B005

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.a.

If required by the Ohio EPA, compliance may be determined in accordance with 40 CFR Part 60, Appendix A, Method 6C.

- 2. Emissions Limitation:
98.3 tons SO₂/rolling 12-months for B002, B005 & B009

Applicable Compliance Method:

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Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.a.

3. Emissions Limitation:
1.9 lbs NO_x/hour for B005

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.

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4. Emissions Limitation:
10.6 tons NO_x per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.b.
5. Emissions Limitation:
2.2 lbs CO/hour for B005

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.
6. Emissions Limitation:
12.6 tons CO per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.c.
7. Emissions Limitation:
0.6 lb PE/mmBtu for B005

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.c.
8. Emissions Limitation:
3.0 lbs PE/hr for B005

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.
9. Emissions Limitation:
11.9 tons PE per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in

Cedar Lane Farms Corp
PTI Application: 02-10776
Issued

Facility ID: 0285030221

Emissions Unit ID: B005

Section C.5.d.

Issued: To be entered upon final issuance

10. Emissions Limitation:

Visible particulate emissions (VE) shall not exceed an opacity of twenty (20) percent as a six-minute average. VE may exceed 20 percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time. This emissions limitation applies, except as exempted by OAC rule 3745-17-07(A)(3).

Applicable Compliance Method:

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

F. Miscellaneous Requirements

1. The terms and conditions of this permit supercede those for B005 established in PTI # 02-2745.
2. The terms and conditions of this permit to install are federally enforceable.

Issued: **To be entered upon final issuance**

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- The specific operations(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 specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
B009 - 8.5 mmBtu/hr atmospheric fluidized bed combustor and boiler, equipped with a fabric filter for particulate control	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07(A)(1)
	OAC rule 3745-17-10(C)(2)
	OAC rule 3745-31-05(C)

Cedar**PTI A**Emissions Unit ID: **B009****Issued: To be entered upon final issuance**

Applicable Emissions <u>Limitations/Control Measures</u>	B009.
Sulfur dioxide (SO ₂): 0.9 lb/mmBtu	CO: 12.6 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.
Nitrogen Oxides (NO _x): 4.9 lbs/hour	PE: 11.9 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.
Carbon Monoxide (CO): 5.9 lbs/hour	See Section A.I.2.d
Particulates (PE): 0.5 lb/mmBtu and 0.4 lb/hour See Section A.I.2.f	See Sections A.I.2.a & b
Coal Quality: See Section A.I.2.c	The particulate emissions limitation specified by this rule is equivalent to the particulate emissions limitation established by OAC rule 3745-31-05(A)(3).
Calcium to sulfur ratio: See Section A.I.2.e.	
The requirements of this rule also include compliance with OAC rule 3745-31-05(C) and OAC rule 3745-17-07(A).	
Amount of coal usage limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 & B009.	
SO ₂ : 98.3 tons/year, on a 12-month rolling basis, for emissions units B002, B005 & B009.	
NO _x : 10.6 tons/year, on a 12-month rolling basis, for emissions units B002, B005 &	

Issued: To be entered upon final issuance**2. Additional Terms and Conditions**

2.a This emissions unit shall comply with the following visible particulate emissions limits:

- i. The visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed an opacity of twenty (20) percent as a six-minute average.
- ii. The visible particulate emissions from the stack may exceed twenty (20) percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time.

2.b The visible particulate emission limitations specified by OAC rule 3745-17-07(A) shall not apply to the following operations, provided the operations are documented daily in a boiler operations log kept at the facility. The log shall clearly document the date, beginning time, and ending time of the exempted operations listed below.

- i. The start-up of the source for a period of time required to achieve stable combustion conditions, but no more than three (3) hours from the moment of start-up. "Start-up" means the commencement of firing of fuel from a cold non-fired condition.
- ii. The shutdown of the source for a period of not more than three (3) hours.
- iii. The malfunction of the source or associated equipment, if the owner of the source or operator of the equipment complies with the requirements of OAC rule 3745-15-06.
- iv. Intermittent soot blowing operations (the cleaning of heat transfer surfaces with pressurized air or steam).
- v. Intermittent ash removal operations (the dumping or pulling of ash).
- vi. The commencement of increased coal firing from a banked condition for a period not to exceed thirty (30) minutes. "Banked condition" means the condition where the fuel is burned on the grates at rates which are sufficient to maintain ignition only.

2.c The coal received for use in this emissions unit will have an ash content of less than 8.0 percent by weight, a heat content of greater than thirteen thousand BTU per pound, and a percent sulfur content no greater than 3.70 %. Ash content, heat content, and sulfur content shall be determined on a dry basis in accordance with the procedures specified in

OAC rule 3745-17-03(B)(9).

- 2.d** The coal usage restriction of 1,400 tons/year on a 12-month rolling basis pertains to all coal used in emissions units B002, B005, and B009. The annual limits for SO₂, NO_x, CO and PE on a 12-month rolling basis, are combined for emissions units B002, B005 and B009.
- 2.e** This emissions unit shall maintain a minimum calcium (from injection of limestone or equivalent) to sulfur (contained in coal fuel) weight ratio within 1.08 and 1.2 in the fluid bed of the reactor at all times.
- 2.f** The particulate emissions from this emissions unit will be controlled by a 93% efficient fabric filter dust collector.
- 2.g** The restrictions regarding the use of fly ash re-injection and an over fire air system found in OAC rule 3745-17-10(C)(7)(a) are not applicable to this bubbling fluidized bed coal combustion process.

B. Operational Restrictions

- Amount of coal usage is limited to 1,400 tons per year, on a 12-month rolling basis, for emissions units B002, B005 and B009.
- During the first twelve (12) months of operation under this permit, emissions units B002, B005 and B009 shall not exceed the cumulative total amount of coal usage as specified for each month in the following table:

<u>Calendar Month</u>	<u>Cumulative Allowable Amount of Coal Usage, in tons</u>
1	175
2	350
3	525
4	700
5	875
6	1,050
7	1,225
8	1,400
9	1,400
10	1,400
11	1,400
12	1,400

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3. The pressure drop across the baghouse shall be maintained within the manufacturer's recommended range of 2 to 5 inches of water while the emissions unit is in operation.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain a operations log for this emissions unit. This operations log shall contain, at minimum, the following information:
 - a. The dates and times of any start-up and shutdown of this emissions unit;
 - b. The duration (in minutes) of the exempted operations listed in Section A.2.b;
 - c. The number of hours of normal or full firing is to be recorded for each day of operation;
 - d. The number of hours of banked condition is to be recorded for each day of operation;
 - e. The total number of hours of operation, i.e., the summation of (c) & (d);
 - f. The amount of coal (in tons) fed to and burned in this emissions unit each day;
 - g. The dates and times of any malfunction of this emissions unit and any corrective action taken;
 - h. The amount of limestone, or equivalent (in pounds), injected into the emissions unit each day.
2. For each shipment of coal to be burned in this emissions unit, the permittee shall record the following information:
 - a. The name of the coal supplier;
 - b. The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The report shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);
 - c. The total quantity (in tons) of coal received;
 - d. The sulfur content (in percent) of the coal on a dry basis;

- e. The moisture content of the coal on a dry basis;
 - f. The ash content (in percent) of the coal on a dry basis;
 - g. The heat content (BTU per pound) of the coal on a dry basis;
 - h. The methods used to determine the properties of the coal.
3. The permittee shall maintain the following monthly records for this emissions unit, when in operation:
- a. The average, hourly nitrogen oxides (NO_x) and carbon monoxide (CO) emissions rates by use of the following equation, when this emissions unit is in operation.

$$ER = \frac{EF \times \text{Coal}}{\text{Hours}}$$

where;

ER = Emissions rate in pounds per hour

EF = Emissions Factor, taken from AP-42 Table 1.1-3 as follows:

NO_x = 15.2 lbs NO_x/ton of coal

CO = 18 lbs CO/ton of coal

Coal = The amount of coal (in tons) fed to the emissions unit and burned that day, as recorded in Section C.1.f.

Hours = The total number of hours of operation (total of both full firing and banked), as recorded in Section C.1. e, for the entire month.

- b. The average, hourly particulate (PE) emissions rate by use of the following equation, when this emissions unit is in operation.

$$ER = \frac{EF \times \text{Coal}}{\text{Hours}} \times (1-CE)$$

where;

ER = Emissions rate in pounds per hour

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EF = Emissions Factor, taken from AP-42 Table 1.1-4 as follows:
PE = 17 lbs PE/ton of coal

Coal = The amount of coal (in tons) fed to the emissions unit and burned that day, as recorded in Section C.1.f.

Hours = The total number of hours of operation (total of both full firing and banked), as recorded in Section C.1. e.

1-CE = Control efficiency of baghouse is 93%. $(1 - CE) = (1 - 0.93) = 0.07$

- c. The particulate emissions rate, in pounds per mmBtu, as calculated by the following equation.

$$ER = PE \text{ Hr} / \text{HC}$$

where;

ER = Emissions rate in pounds particulate per mmBtu

PE Hr = Particulate hourly emissions rate (lbs PE/hr) as calculated in Section C.3.b.

HC = Maximum heating capacity of emissions unit, in mmBtu per hour

- d. The calculation of the calcium to sulfur weight ratio for each day of the month when limestone (or its equivalent) and coal were fed to this emissions unit. This calculation may be performed by multiplying the amount of limestone by the percent by weight of pure calcium carbonate, CaCO_3 . The amount of calcium, Ca, is then determined by the ratio of $40/100 = X/\text{amt of CaCO}_3$, where X = the amount of calcium. The amount of sulfur is determined by multiplying the amount of coal by the percent by weight of sulfur. The calcium to sulfur weight ratio is determined by dividing Ca by S, i.e., Ca/S.
4. The permittee shall maintain the following monthly records regarding coal usage for emissions units B002, B005 and B009:
- The total amount of coal, in tons, fed to and burned in emissions units B002 and B005.
 - The total amount of coal, in tons, fed to and burned in emissions unit B009.
 - The cumulative, total amount of coal, in tons, fed to and burned in emissions units B002

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and B005 for the past 12-months.

- d. The cumulative, total amount of coal, in tons, fed to and burned in emissions unit B009 for the past 12-months
5. The permittee shall maintain the following monthly records regarding emissions rates for emissions units B002, B005 and B009:

- a. The cumulative sulfur dioxide emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 140.4 \text{ lbs SO}_2/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 23.4 \text{ lbs SO}_2/\text{ton} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons sulfur dioxide per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"140.4 lbs SO₂/ton" is the converted value in lbs/ton from 5.4 lbs SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate. Per AP-42 Chapter 1.15, the conversion is performed by multiplying 5.4 lbs SO₂/mmBtu with 26.0 mmBtu/ton to produce 140.4 lbs SO₂/ton.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"23.4 lbs SO₂/ton" is the converted value in lbs/ton from 0.9 lb SO₂/mmBtu, which is the allowable sulfur dioxide emissions rate.

- b. The cumulative NO_x emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = [\text{Coal amt from B002 \& B005} \times 9.5 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 15.2 \text{ lbs NO}_x/\text{ton of coal} \times \text{ton}/2,000 \text{ lbs}]$$

where;

$$ER = \text{Emissions rate, in tons NO}_x \text{ per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"9.5 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"15.2 lbs NO_x/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- c. The cumulative CO emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = \frac{[\text{Coal amt from B002 \& B005} \times 11 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 18 \text{ lbs CO/ton of coal} \times \text{ton}/2,000 \text{ lbs}]}{\text{ton}} + \frac{\text{ton}}{2,000 \text{ lbs}}$$

where;

$$ER = \text{Emissions rate, in tons CO per rolling 12-months}$$

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"11 lbs NO_x/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-3.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"18 lbs CO/ton of coal" is an emissions factor for a FBC, bubbling bed boiler, taken from AP-42, Table 1.1-3.

- d. The cumulative PE emissions rate, in tons per rolling 12-months, as calculated by the following equation.

$$ER = \frac{[\text{Coal amt from B002 \& B005} \times 15 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs}] + [\text{Coal amt from B009} \times 17 \text{ lbs PE/ton of coal} \times \text{ton}/2,000 \text{ lbs} \times (0.07)]}{\text{ton}} + \frac{\text{ton}}{2,000 \text{ lbs}}$$

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where;

ER = Emissions rate, in tons PE per rolling 12-months

"Coal amt from B002 & B005" is the total amount of coal, in tons, fed to and burned in emissions units B002 and B005 over the past 12 months, as recorded in Section C.4.c.

"15 lbs PE/ton of coal" is an emissions factor for under feed stoker boilers, taken from AP-42, Table 1.1-4.

"Coal amt from B009" is the total amount of coal, in tons, fed to and burned in emissions unit B009 over the past 12 months, as recorded in Section C.4.d.

"17 lbs PE/ton of coal" is an emissions factor, taken from AP-42, Table 1.1-4.

"(0.07)" is the result of (1 minus control efficiency of baghouse, which is 93% or 0.93).

6. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which include the following information:
 - a. An identification of each day during which the hourly emissions limitation(s) for NO_x, CO and/or PE was/were exceeded, and the actual hourly emissions rate for the applicable pollutant(s);
 - b. An identification of each day during which the particulate emissions limitation (lbs PE/mmBtu) was exceeded, and the actual emissions rate;
 - c. An identification of each day during which the visible particulate emissions from the exhaust serving this emissions unit exceeded the limitations specified in OAC rules 3745-17-07(A)(1) & (A)(2).
 - d. An identification of any shipment of coal used for this emissions unit that did not meet the ash, heat, and sulfur specifications listed in Section A.2.c.

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- e. An identification of each day during which any required monitoring and record keeping as listed in Section C was not performed.
- g. An identification of each month within the quarter when the total amount of coal used over the past 12 months in emissions units B002, B005 and B009 exceeds 1,400 tons. The actual total amount of coal for each such month shall be reported.
- h. An identification of each month within the quarter when the calculated annual SO₂, NO_x, CO and PE emissions rates, as recorded per Section C.5, exceeds the appropriate allowable limit. The actual, calculated annual emissions rates for these pollutants shall also be reported.
- i. An identification of each day during which the calcium to sulfur weight ratio was not maintained within the range of 1.08 and 1.2, as required in Section A.2.e and recorded in Section C.3.d.

The calendar quarters are January 1 - March 31, April 1 - June 30, July 1 - September 30, and October 1 - December 31.

- 2. If no deviations occurred during the calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarter.

E. Testing Requirements

- 1. Emissions Limitation:
0.9 lb SO₂/mmBtu for B009

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the above emissions limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 6C.

- 2. Emissions Limitation:
98.3 tons SO₂/rolling 12-months for B002, B005 & B009

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.a.

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3. Emissions Limitation:
4.9 lbs NOx/hour for B009

Applicable Compliance Method:

Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.a.

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4. Emissions Limitation:
10.6 tons NOx per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.b.
5. Emissions Limitation:
5.9 lbs CO/hour for B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.a.
6. Emissions Limitation:
12.6 tons CO per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.5.c.
7. Emissions Limitation:
0.5 lb PE/mmBtu for B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.c.
8. Emissions Limitation:
0.4 lb PE/hr for B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in Section C.3.b.
9. Emissions Limitation:
11.9 tons PE per year, on a 12-month rolling basis for B002, B005 & B009

Applicable Compliance Method:
Compliance with the above emissions limitation shall be determined on the record keeping in

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10. Emissions Limitation:

Visible particulate emissions (VE) shall not exceed an opacity of twenty (20) percent as a six-minute average. VE may exceed 20 percent as a six-minute average for not more than six (6) consecutive minutes in any sixty-minute period, but shall not exceed sixty (60) percent opacity at any time. This emissions limitation applies, except as exempted by OAC rule 3745-17-07(A)(3).

Applicable Compliance Method:

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

F. Miscellaneous Requirements

1. The terms and conditions of this permit supercede those for B009 established in PTI # 02-17358.
2. The terms and conditions of this permit to install are federally enforceable.