



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center
50 West Town Street, Suite 700
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: FINAL PERMIT TO INSTALL

FRANKLIN COUNTY

Application No: 01-12073

Fac ID: 0125040519

DATE: 4/3/2007

The Kroger Co Columbus Bakery
Pete Anderson
457 Cleveland Avenue
Columbus, OH 43203

CERTIFIED MAIL

	TOXIC REVIEW
	PSD
Y	SYNTHETIC MINOR
	CEMS
	MACT
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

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.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, OH 43215

Sincerely,

Michael W. Ahern

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

CC: USEPA

CDO



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install
Terms and Conditions

Issue Date: 4/3/2007
Effective Date: 4/3/2007

FINAL PERMIT TO INSTALL 01-12073

Application Number: 01-12073

Facility ID: 0125040519

Permit Fee: **\$800**

Name of Facility: The Kroger Co Columbus Bakery

Person to Contact: Pete Anderson

Address: 457 Cleveland Avenue
Columbus, OH 43203

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

457 Cleveland Avenue
Columbus, Ohio

Description of proposed emissions unit(s):

Cracker line 8.

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

Chris Kralak

Chris Korleski
Director

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 (i.e., postmarked) quarterly 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 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.

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.

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>
OC	88.5

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 - (P001) - Bread Line Number 1 (Modification to PTI 01-05974, issued January 6, 1999)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-35-07(B) (synthetic minor to avoid Title V)	Organic Compounds (OC) emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling 13, 4-week periods. see B.1 below
OAC rule 3745-31-05(A)(3)	OC emissions from this emissions unit shall not exceed 9.3 pounds per hour. see 2.a below
ORC 3704.03(T)(4)	see 2.b below
OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 pounds per million BTU (mmBtu) of actual heat input.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

2. Additional Terms and Conditions

- 2.a The hourly OC limitation for this emissions unit was established to reflect the maximum potential to emit. Therefore, it is not necessary to develop additional monitoring, record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE, carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from this air contaminant source since the uncontrolled potentials to emit are less than ten tons per year.

- 2.c** OAC rule 3745-21-07(G) is not applicable to this emissions unit because no liquid organic materials are employed.

B. Operational Restrictions

1. This emissions unit has been in operation for more than 13 rolling 4-week periods and, as such, the permittee has existing records to generate the rolling, 13, 4-week summation of the production rate, upon issuance of this permit. The maximum annual combined production rate for emissions units P001, P003, P006 and P008, shall not exceed 40,000 tons of bread and/or buns, and 24,000 tons of crackers based upon a rolling, 13, 4-week summation of the production rates.
2. The permittee shall burn only natural gas in this emissions unit

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P001, P003, P006 and P008:
 - a. the production rate of each type of baked goods, for each month, in tons;
 - b. the OC emission rate for each month (see section E.1 for calculation);
 - c. the rolling, 13, 4-week summation of the production rates of baked goods, in tons; and
 - d. the rolling, 13, 4-week summation of the OC emission rates.
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 13, 4-week limitation of the production rate. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

3. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 13, 4-week emission limitation for OC. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

E. Testing Requirements

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

1. **Emission Limitation:**
OC emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods.

Applicable Compliance Method:

Compliance may be demonstrated by multiplying the rolling 13, 4-week summation of the production rates by the OC emission factors of 1.54 pounds of OC per ton of bread produced, 1.54 pounds of OC per ton of buns produced, and 4.10 pounds of OC per ton of crackers produced (See E.2) and dividing by 2000 pounds per ton.

2. The OC emission factor was calculated for each baked good using the following equation:

$$OC\ ef = 0.95Y_i + 0.185t_i - 0.51S - 0.86t_s + 1.90, \text{ where}$$

OC ef = emission factor in pounds of uncontrolled OC emissions per ton of bread or other yeast leavened product produced;

Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent for bread and buns and 0.95 percent for crackers);

t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hrs for bread and buns and 6.5 hours for crackers);

S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1.0 percent for bun and bread and 0 percent for crackers); and

t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.5 hrs for bread and buns and 0 hours for crackers).

the above equation was taken from the USEPA publication "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) as published in AP 42, Fifth Edition, Volume I.

3. **Emission Limitation:**

\\cnas\dapc\prod\attachments\Facilities\0125040519\Permits\105561520105.wpd

The Kroger Co Columbus Bakery

PTI Application: 01-12073

Issued: 4/3/2007

Facility ID: 0125040519

Emissions Unit ID: P001

OC emissions from this emissions unit shall not exceed 9.3 pounds per hour.

Applicable Compliance Method:

The hourly emission limitation was established by summing the OC emissions from baking and natural gas combustion.

The hourly OC emissions for natural gas combustion was calculated using the following equation:

$OC_{ov} = Q_{ov} \times OC_{ng}$, where

Q_{ov} = Maximum firing rate of oven, (7941 ft³/hour)

OC_{ng} = 5.5 lbs/1,000,000 ft³ Natural Gas (AP 42, Fifth Edition, Volume I)

The hourly OC emissions for baking was calculated using the following equation:

$OC_{ov} = Q_{bg} \times OC_{ef}$, where

Q_{bg} = Maximum baked goods production rate (6 tons per hour)

OC_{ef} = 1.54 lbs OC/ton of baked goods produced (applicable to the bread line(see E.2)) where;

- Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent);
- t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hours);
- S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1 percent); and
- t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.5 hours).

- 4. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20 percent opacity.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission 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)

- 5. Emission Limitation:
Particulate emissions (PE) shall not exceed 0.020 pounds per mmBtu of actual heat input.

Applicable compliance method:

Compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emission unit (7,941 cubic feet per hour) by the AP-42 (Fifth edition) emission factor for natural gas combustion (7.6 pounds per million cubic feet) and

dividing by the maximum hourly heat input of the emissions unit (8.1 mmBtu per hour).
If required, the permittee shall demonstrate compliance with this limitation in
accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(9).

F. Miscellaneous Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the increase in emissions due to the modification(s) to the emissions unit was less than 1 ton per year of each toxic pollutant listed in OAC 3745-114-01.
2. The terms & conditions in this permit supercede those identified in PTI 01-5974, issued January 6, 1999.
3. The following terms and conditions are federally enforceable: A.1 - E.5.

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 - (P003) - Bun Line Number 3 (Modification to PTI 01-05974 issued January 6, 1999)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-35-07(B) (synthetic minor to avoid Title V)	Organic Compounds (OC) emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods. see B.1 below
OAC rule 3745-31-05(A)(3)	OC emissions from this emissions unit shall not exceed 4.1 pounds per hour. see 2.a below
ORC 3704.03(T)(4)	see 2.b below
OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 pounds per million BTU (mmBtu) of actual heat input.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

2. Additional Terms and Conditions

- 2.a The hourly OC limitation for this emissions unit was established to reflect the maximum potential to emit. Therefore, it is not necessary to develop additional monitoring, record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE, carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from this air contaminant source since the uncontrolled potentials to emit are is less than ten tons per year.

- 2.c** OAC rule 3745-21-07(G) is not applicable to this emissions unit because no liquid organic materials are employed.

B. Operational Restrictions

1. This emissions unit has been in operation for more than 13 rolling 4-week periods and, as such, the permittee has existing records to generate the rolling, 13, 4-week summation of the production rate, upon issuance of this permit. The maximum annual combined production rate for emissions units P001, P003, P006 and P008, shall not exceed 40,000 tons of bread and/or buns, and 24,000 tons of crackers based upon a rolling, 13, 4-week summation of the production rates.
2. The permittee shall burn only natural gas in this emissions unit

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P001, P003, P006 and P008:
 - a. the production rate of each type of baked goods, for each month, in tons
 - b. the OC emission rate for each month (see section E.1 for calculation);
 - c. the rolling, 13, 4-week summation of the production rates of baked goods, in tons; and
 - d. the rolling, 13, 4-week summation of the OC emission rates
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 13, 4-week limitation of the production rate. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

3. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 13, 4-week emission limitation for OC. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

E. Testing Requirements

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

1. OC emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods.

Applicable Compliance Method:

Compliance may be demonstrated by multiplying the rolling 13, 4-week summation of the production rates by the OC emission factors of 1.54 pounds of OC per ton of bread produced, 1.54 pounds of OC per ton of buns produced, and 4.10 pounds of OC per ton of crackers produced (See E.2) and dividing by 2000 pounds per ton.

2. $OC\ ef = 0.95Y_i + 0.185t_i - 0.51S - 0.86t_s + 1.90$, where

OC ef = emission factor in pounds of uncontrolled OC emissions per ton of bread or other yeast leavened product produced;

Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent for bread and buns and 0.95 percent for crackers);

t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hrs for bread and buns and 6.5 hours for crackers);

S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1.0 percent for bun and bread and 0 percent for crackers); and

t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.50 hrs for bread and buns and 0 hours for crackers).

the above equation was taken from the USEPA publication "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) as published in AP 42, Fifth Edition, Volume I.

3. Emission Limitation:
OC emissions from this emissions unit shall not exceed 4.1 pounds per hour.

Applicable Compliance Method:

The hourly emission limitation was established by summing the OC emissions from baking and natural gas combustion.

The hourly OC emissions for natural gas combustion was calculated using the following equation:

$OC_{ov} = Q_{ov} \times OC_{ng}$, where

Q_{ov} = Maximum firing rate of oven, (4412 ft³/hour)

OC_{ng} = 5.5 lbs/1,000,000 ft³ Natural Gas (AP 42, Fifth Edition, Volume I)

The hourly OC emissions for baking was calculated using the following equation:

$OC_{ov} = Q_{bg} \times OC_{ef}$, where

Q_{bg} = Maximum baked goods production rate (2.62 tons per hour)

OC_{ef} = 1.54 lbs OC/ton of baked goods produced (applicable to the bun line (see E.2) where;

- Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent);
- t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hours);
- S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1.0 percent); and
- t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.50 hours).

4. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20 percent opacity.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission 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)

5. Emission Limitation:
Particulate emissions (PE) shall not exceed 0.020 pounds per mmBtu of actual heat input.

Applicable Compliance Method:

Compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emission unit (4,412 cubic feet per hour) by the AP-42 (Fifth edition) emission factor for natural gas combustion (7.6 pounds per million cubic feet) and dividing by the maximum hourly heat input of the emissions unit (4.5 mmBtu per hour).

The Kroger Co Columbus Bakery

PTI Application: 01-12073

Issued: 4/3/2007

Facility ID: 0125040519

Emissions Unit ID: P003

If required, the permittee shall demonstrate compliance with this limitation in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(9).

F. Miscellaneous Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the increase in emissions due to the modification(s) to the emissions unit was less than 1 ton per year of each toxic pollutant listed in OAC 3745-114-01.
2. The terms & conditions in this permit supercede those identified in PTI 01-5974, issued January 6, 1999.
3. The following terms and conditions are federally enforceable: A.1 - E.5.

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 - (P006) - Cracker Line Number 1 (Modification to PTI 01-08725, issued June 10, 2003)

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-35-07(B) (synthetic minor to avoid Title V)	Organic Compounds (OC) emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling 13, 4-week periods. see B.1 below
OAC rule 3745-31-05(A)(3)	OC emissions from this emissions unit shall not exceed 5.3 pounds per hour. see 2.a below
ORC 3704.03(T)(4)	see 2.b below
OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 pounds per million BTU (mmBtu) of actual heat input.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

2. Additional Terms and Conditions

- 2.a The hourly OC limitation for this emissions unit was established to reflect the maximum potential to emit. Therefore, it is not necessary to develop additional monitoring, record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE, carbon monoxide (CO), sulfur dioxide (SO₂), and

nitrogen oxides (NO_x) from this air contaminant source since the uncontrolled potentials to emit are is less than ten tons per year.

- 2.c** OAC rule 3745-21-07(G) is not applicable to this emissions unit because no liquid organic materials are employed.

B. Operational Restrictions

1. This emissions unit has been in operation for more than 13 rolling 4-week periods and, as such, the permittee has existing records to generate the rolling, 13, 4-week summation of the production rate, upon issuance of this permit. The maximum annual combined production rate for emissions units P001, P003, P006 and P008, shall not exceed 40,000 tons of bread and/or buns, and 24,000 tons of crackers based upon a rolling, 13, 4-week summation of the production rates.

2. The permittee shall burn only natural gas in this emissions unit

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P001, P003, P006 and P008:
 - a. the production rate of each type of baked goods, for each month, in tons
 - b. the OC emission rate for each month (see section E.1 for calculation);
 - c. the rolling, 13, 4-week summation of the production rates of baked goods, in tons; and
 - d. the rolling, 13, 4-week summation of the OC emission rates

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

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 13, 4-week limitation of the production rate. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 13, 4-week emission limitation for OC. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

E. Testing Requirements

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

1. Emission Limitation:
OC emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods.

Applicable Compliance Method:

Compliance may be demonstrated by multiplying the rolling 13, 4-week summation of the production rates by the OC emission factors of 1.54 pounds of OC per ton of bread produced, 1.54 pounds of OC per ton of buns produced, and 4.10 pounds of OC per ton of crackers produced (See E.2) and dividing by 2000 pounds per ton.

2. $OC\ ef = 0.95Y_i + 0.185t_i - 0.51S - 0.86t_s + 1.90$, where

OC ef = emission factor in pounds of uncontrolled OC emissions per ton of bread or other yeast leavened product produced;

Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent for bread and buns and 0.95 percent for crackers);

t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hrs for bread and buns and 6.5 hours for crackers);

S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1.0 percent for bun and bread and 0 percent for crackers); and

t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.5 hrs for bread and buns and 0 hours for crackers).

the above equation was taken from the USEPA publication "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) as published in AP 42, Fifth Edition, Volume I.

3. Emission Limitation:
OC emissions from this emissions unit shall not exceed 5.3 pounds per hour.

Applicable Compliance Method:

The hourly emission limitation was established by summing the OC emissions from baking and natural gas combustion.

The hourly OC emissions for natural gas combustion was calculated using the following equation:

$$OC_{ov} = Q_{ov} \times OC_{ng}, \text{ where}$$

Q_{ov} = Maximum firing rate of oven, (6078 ft³/hour)

OC_{ng} = 5.5 lbs/1,000,000 ft³ Natural Gas (AP 42, Fifth Edition, Volume I)

The hourly OC emissions for baking was calculated using the following equation:

$$OC_{ov} = Q_{bg} \times OC_{ef}, \text{ where}$$

Q_{bg} = Maximum baked goods production rate (1.3 tons per hour)

OC_{ef} = 4.1 lbs OC/ton of baked goods produced (applicable to the cracker line(see E.2) where;

Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.95 percent);

t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (6.5 hours);

S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (0 percent); and

t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (0 hours).

4. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20 percent opacity.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission 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)

5. Emission Limitation:
Particulate emissions (PE) shall not exceed 0.020 pounds per mmBtu of actual heat input.

Applicable Compliance Method:

The Kroger Co Columbus Bakery

PTI Application: 01-12073

Issued: 4/3/2007

Facility ID: 0125040519

Emissions Unit ID: P006

Compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emission unit (6,078 cubic feet per hour) by the AP-42 (Fifth edition) emission factor for natural gas combustion (7.6 pounds per million cubic feet) and dividing by the maximum hourly heat input of the emissions unit (6.2 mmBtu per hour). If required, the permittee shall demonstrate compliance with this limitation in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(9).

F. Miscellaneous Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the increase in emissions due to the modification(s) to the emissions unit was less than 1 ton per year of each toxic pollutant listed in OAC 3745-114-01.
2. The terms & conditions in this permit supercede those identified in PTI 01-08725, issued June 10, 2003.
3. The following terms and conditions are federally enforceable: A.1 - E.5.

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 - (P008) - Cracker Line Number 8

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-35-07(B) (synthetic minor to avoid Title V)	Organic Compounds (OC) emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods. see B.1 below
OAC rule 3745-31-05(A)(3)	OC emissions from this emissions unit shall not exceed 13.0 pounds per hour. see 2.a below
ORC 3704.03(T)(4)	see 2.b below
OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) shall not exceed 0.020 pounds per million BTU (mmBtu) of actual heat input.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

2. Additional Terms and Conditions

- 2.a The hourly OC limitation for this emissions unit was established to reflect the maximum potential to emit. Therefore, it is not necessary to develop additional monitoring, record keeping and/or reporting requirements to ensure compliance with this limit.
- 2.b The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE, carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from this air contaminant source since the uncontrolled potentials to emit are is less than ten tons per year.

- 2.c** OAC rule 3745-21-07(G) is not applicable to this emissions unit because no liquid organic materials are employed.

B. Operational Restrictions

1. The maximum annual combined production rate for emissions units P001, P003, P006 and P008, shall not exceed 40,000 tons of bread and/or buns, and 24,000 tons of crackers based upon a rolling, 13, 4-week summation of the production rates.
2. The permittee shall burn only natural gas in this emissions unit

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P001, P003, P006 and P008:
 - a. the production rate of each type of baked goods, for each month, in tons
 - b. the OC emission rate for each month (see section E.1 for calculation);
 - c. the rolling, 13, 4-week summation of the production rates of baked goods, in tons; and
 - d. the rolling, 13, 4-week summation of the OC emission rates
2. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

D. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 13, 4-week limitation of the production rate. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.
2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 13, 4-week emission limitation for OC. These reports shall be submitted in accordance with the reporting requirements specified in Part 1 - General Terms and Conditions, Section A of this permit.

E. Testing Requirements

The Kroger Co Columbus Bakery

PTI Application: 01-12073

Issued: 4/3/2007

Facility ID: 0125040519

Emissions Unit ID: P008

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

1. Emission Limitation:
OC emissions from emissions units P001, P003, P006, and P008 shall not exceed 88.5 tons per rolling, 13, 4-week periods.

Applicable Compliance Method:

Compliance may be demonstrated by multiplying the rolling 13, 4-week summation of the production rates by the OC emission factors of 1.54 pounds of OC per ton of bread produced, 1.54 pounds of OC per ton of buns produced, and 4.10 pounds of OC per ton of crackers produced (See E.2) and dividing by 2000 pounds per ton.

2. $OC\ ef = 0.95Y_i + 0.185t_i - 0.51S - 0.86t_s + 1.90$, where

OC ef = emission factor in pounds of uncontrolled OC emissions per ton of bread or other yeast leavened product produced;

Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.90 percent for bread and buns and 0.95 percent for crackers);

t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (3.0 hrs for bread and buns and 6.5 hours for crackers);

S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (1.0 percent for bun and bread and 0 percent for crackers); and

t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (1.5 hrs for bread and buns and 0 hours for crackers).

the above equation was taken from the USEPA publication "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) as published in AP 42, Fifth Edition, Volume I.

3. Emission Limitation:
OC emissions from this emissions unit shall not exceed 13.0 pounds per hour.

Applicable Compliance Method:

The hourly emission limitation was established by summing the OC emissions from baking and natural gas combustion.

The hourly OC emissions for natural gas combustion was calculated using the following equation:

$OC_{ov} = Q_{ov} \times OC_{ng}$, where

Q_{ov} = Maximum firing rate of oven, (13,941 ft³/hour)

OC_{ng} = 5.5 lbs/1,000,000 ft³ Natural Gas (AP 42, Fifth Edition, Volume I)

The hourly OC emissions for baking was calculated using the following equation:

$OC_{ov} = Q_{bg} \times OC_{ef}$, where

Q_{bg} = Maximum baked goods production rate (3.1 tons per hour)

OC_{ef} = 4.1 lbs OC/ton of baked goods produced (applicable to the bread line(see E.2) where;

- Y_i = initial baker's percent of yeast to the nearest tenth of a percent (0.95 percent);
- t_i = total yeast action time (fermentation time) of initial yeast, in hours, to the nearest tenth of an hour (6.5 hours);
- S = final (spiking) bakers percent of yeast to the nearest tenth of a percent (0 percent); and
- t_s = spiking yeast action time, in hours, to the nearest tenth of an hour (0 hours).

4. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20 percent opacity.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission 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)

5. Emission Limitation:

Particulate emissions (PE) shall not exceed 0.020 pounds per mmBtu of actual heat input.

Applicable Compliance Method:

Compliance shall be determined by multiplying the maximum hourly gas burning capacity of the emission unit (13,941 cubic feet per hour) by the AP-42 (Fifth edition) emission factor for natural gas combustion (7.6 pounds per million cubic feet) and dividing by the maximum hourly heat input of the emissions unit (14.2 mmBtu per hour). If required, the permittee shall demonstrate compliance with this limitation in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(9).

F. Miscellaneous Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions will be less than 1.0 ton of each toxic pollutant listed in OAC 3745-114-01. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that a new permit to install application would be required for an emissions unit if changes in the composition of the materials or use of new materials would cause the

The Kroger Co Columbus Bakery

PTI Application: 01-12073

Issued: 4/3/2007

Facility ID: 0125040519

Emissions Unit ID: P008

emissions of any pollutant that listed in OAC 3745-114-01, to increase to above 1.0 ton per year.

2. The terms & conditions in this permit supercede those identified in PTI 01-08725
3. The following terms and conditions are federally enforceable: A.1 - E.5.