

TITLE V APPLICATION REVIEW

Facility Name: The Earthgrains Baking Companies, Inc. - Atlanta Bakery

City: Decatur

County: DeKalb

AIRS #: 04-13-089-00239

Application #: TV- 9317

Date Application Received: October 23, 1996

Date Application Deemed

Administratively Complete: March 24, 1997

Date of Draft Permit: June 11, 1998

Permit No: 2051-089-0239-V-01-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to The Earthgrains Companies, Inc. - Atlanta Bakery and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name: The Earthgrains Baking Companies, Inc. - Atlanta Bakery
2. Parent/Holding Company Name: The Earthgrains Company
3. Previous and/or Other Name(s): Colonial Baking Company
4. Facility Location: 3310 Panthersville Road
Decatur, Georgia 30034
DeKalb County
5. Attainment or Non-attainment Area Location: DeKalb County - Non-Attainment Area
6. Class I Area Impacts: There is no Class I area within 100 km of this source.

B. Site Determination: There are no site determination issues. There are no other facilities which could possibly be contiguous or under common control.

C. Existing Permits

Table 1: List of Current Permits, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
2051-044-10283	Issued August 21, 1989		x
2051-044-10283	Amended December 15, 1989		x
2051-044-10283	Amended August 30, 1991		x

D. Process Description

1. SIC Code: 2051 - Bread and other bakery products except cookies and crackers
2. Description of Product(s):
Earthgrains Baking Companies, Inc. - Atlanta Bakery produces bread and buns.
3. Overall Facility Process Description:
 - a. **Bread production** - Flour is transferred from one of five flour storage silos to a mechanical hopper and sifter. Flour is then deposited into the bread sponge mixing tank where it is sifted and mixed with other ingredients such as yeast, yeast food, salt, and water to make the sponge-dough mixture. The mixture is pumped to the sponge fermentation trough where the yeast is allowed to react. The mixture is then mixed with more flour and sugar in one of two bread dough mixing tanks. The resulting dough is then kneaded, cut into the proper size and then molded into the baking pans. The dough then enters the proof box for one hour where it rises at a temperature of 120 F. The dough is baked in a Baker Perkins Bread Oven (Source Code EU-1) for 17 minutes at

a temperature of 400 F to 450 F. The loaves exiting the oven are allowed to cool on the conveyor to the slicing and packaging area.

The emissions associated with the oven (Source Code EU-1) are primarily VOC (ethanol). Ethanol emissions account for well over 99 % of the total VOC emissions from the oven. The oven (EU-1) has a maximum input rate of 14,600 pounds per hour. The HAP emissions associated with the oven are considered negligible. See Attachments for complete emissions calculations.

- b. **Bun production** - The flour handling process is the same process as described above for the bread oven. The facility utilizes two ovens (Baker Perkins 800 and 400 line Bun Ovens) to produce buns. Either sponge-dough or straight-dough can be utilized by the facility to produce buns. For the sponge-dough operations the flour, water, and yeast is mixed in the bun sponge mixing tank to make the sponge mixture. The mixture is pumped to the sponge fermentation trough where the yeast is allowed to react. The mixture is then mixed with more flour and sugar in one of two bun dough mixing tanks. The resulting dough is then kneaded, cut into the proper size and then molded into the baking pans. The dough then enters the proof box for one hour where it rises at a temperature of 120 F. The dough is baked in one of the two Baker Perkins Bun Ovens (Source Codes EU-2 and EU-3) for 8 minutes at a temperature of 400 F to 450 F. The buns exiting the oven are allowed to cool on the conveyor to the slicing and packaging area.

The emissions associated with the oven (Source Code EU-1) are primarily VOC (ethanol). Ethanol emissions account for well over 99 % of the total VOC emissions from the ovens. The Baker Perkins 800 line Bun Oven (EU-2) has a maximum input rate of 6,750 pounds per hour. The Baker Perkins 400 line Bun Oven (EU-3) has a maximum input rate of 4850 pounds per hour. A Smith Environmental Thermal Oxidizer (Source Code C001) is utilized to control the VOC emissions from stack ST1B on the bread oven (EU-1). This is done according to the facility's Division approved RACT plan. The thermal oxidizer has a rating of 1.4 MMBTU/hr and utilizes natural gas or propane. The HAP emissions associated with the ovens and the thermal oxidizer are considered negligible. See Attachments for complete emissions calculations.

- c. **Support Facilities** - Five flour silos (Source Codes FS1 thru FS5) provide the flour for the process. The two Burnham Corporation Boilers (Source Codes B1 and B2) provide steam for the proof box on each process line. Both boilers utilize natural gas or propane and have maximum ratings of 3.5 MMBTU/hr.

4. Overall Process Flow Diagram: See Attachments

5. Overall Process Emissions:

Table 2: The Earthgrains Companies, Inc. - Atlanta Bakery Emissions

Pollutant	Potential Emissions (tpy) - without Permit Limits	Potential Emissions (tpy) - with Permit Limits	Actual Emissions (tpy)
VOC	292.02	100.0	61.29
NOx	21.7	21.7	11.88
CO	3.7	3.7	2.0
PM-10	12.7	12.7	0.7
Sulfur Dioxide	0.1	0.1	0.06

6. Toxic Impact Assessment: Since the facility is not requesting an emissions increase or modifying its processes, a toxic impact assessment is not deemed necessary at this time.

E. Regulatory Status

1. PSD/NSR: Major source under PSD/NSR regulations.
The facility's current permit (# 2051-044-10283) limits VOC emissions to 100 tpy. The facility is a major source and also a NSR source since it is in the non-attainment area. The Title V permit will contain a VOC emission limit of 100 tpy since the facility is not modifying its process lines and/or requesting an increase to the 100 tpy VOC limitation. Therefore, NSR is not necessary at this time.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's Title V status?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	✓			✓
PM ₁₀	✓			✓
SO ₂	✓			✓
VOC	✓	✓		
NO _x	✓			✓
CO	✓			✓
TRS	✓			✓
H ₂ S	✓			✓
Individual HAP	n/a			
Total HAPs	n/a			

3. MACT Standards: This facility is not a major source for any hazardous air pollutants (HAP) and is not subject to any MACT Standards.

4. Program Applicability

Indicate if the following programs are applicable to the facility (with a “yes” or “no”).

- Program Code 6 - PSD: no
- Program Code 8 - Part 61 NESHAP: no
- Program Code 9 - NSPS: no
- Program Code M - Part 63 NESHAP: no
- Program Code V - Title V: yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

1. The facility is limited to 100 tons per year of VOC emissions from the source. This limit was established because that is the VOC emission limit that the facility has in permit No. 2051-044-10283 (previous permit). The facility is in compliance with this emission limit.

B. Applicable Rules and Regulations:

- Rules and Regulations Assessment - The facility is subject to the following Georgia State Rules:

391-3-1-.02(2)(b) Visible Emissions
391-3-1-.02(2)(d) Fuel Burning Equipment
391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes
391-3-1-.02(3) Sampling
391-3-1-.02(2)(tt) VOC Emissions from Major Sources

- Emission and Operating Standards:

391-3-1-.02(2)(b) Visible Emissions: Limits opacity of air contaminant source to less than 40 %.

391-3-1-.02(2)(d) Fuel Burning Equipment: Limits particulate matter from any fuel burning source less than 10 million BTU per hour to 0.5 pounds per million BTU heat input. Actual PM emissions are less than 0.1 pounds per million BTU heat input.

391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes: Limits emission of particulate matter from process equipment to 22.96 pounds per hour based on the formula $E = 4.1(P)^{0.67}$, E = emission rate in pounds per hour, P = process input weight rate in tons per hour = 13.08 tons/hr. Actual PM emissions are less than 0.3 pounds per hour.

391-3-1-.02(2)(tt) The facility must operate the thermal oxidizer (Source Code C001) combustion zone temperature at or above 760°C (1400°F). This will ensure that VOC emissions are reduced from oven EU-1 rear stack (ST1B) by at least 90 % assuming 100 % capture efficiency. This is the accepted RACT plan.

C. Compliance Status: A Section 11.10 form indicating noncompliance with any Federal or State rule was not submitted by the facility.

D. Operational Flexibility: The facility has not requested any operational flexibility in their Title V application. There are no new rules, regulations or work practices that will be applicable to this source for the purposes of operational flexibility.

E. Permit Conditions:

Conditions for the Title V permit Part 2.0 include the following:

1. Condition 2.1.1 limits the facility's VOC emissions to no more than 100 tpy during any twelve consecutive months.

III. Regulated Equipment Requirements

A. Brief Process Description:

- (1) The bread and bun production lines consists of three ovens total (Source Codes EU-1 through EU-3) and one natural gas burner each. The burner ratings for the ovens are 8.0 MMBTU/hr for the bread oven and 4.5 MMBTU/hr and 3.0 MMBTU/hr for the two bun ovens. The ovens will comply with all applicable Georgia Rules. For process description see Bread/Bun Production in Section I D. - Overall Process Description. The ovens will emit ethanol (VOC).

The thermal oxidizer (Source Code C001) utilizes a natural gas burner that has a rating of 1.4 MMBTU/hr. The combustion zone temperature of the thermal oxidizer will be maintained at or above 1400 °F since previous testing has shown that this temperature is sufficient to maintain a VOC destruction efficiency of 90 %. The thermal oxidizer will comply with all applicable Georgia Rules.

- (2) Two 3.5 MMBTU/hr boilers (Source Codes B1 & B2) are used to provide steam to the proof Box on each production line. The two boilers (Source Codes B1 & B2) are subject to Georgia State Rule 391-3-1-.02(d) Fuel Burning Equipment. The boilers B1 & B2 are fired with natural gas with LPG as a backup fuel and comply with the above Georgia State Rule.

B. Equipment List for the Process:

Table 3: Equipment List and Source Code

Emission Unit ID No.	Emission Unit Description	Applicable Permit Condition No.(s)	Applicable Requirement(s)	Air Pollution Control Device No.
EU-1	Bread oven	3.4.1, 3.4.2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	C001
EU-2 & EU-3	Bun ovens	3.4.1, 3.4.2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(tt)	none
FS1 - FS5	Flour Storage Silos	3.4.1, 3.4.2	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	FF1 - FF5

C. Equipment & Rule Applicability:

- Emission and Operating Caps:

1. The facility is limited to 100 tons per year of VOC emissions from the source. This limit was established because that is the VOC emission limit that the facility has in permit No. 2051-044-10283 (previous permit). The facility is in compliance with this emission limit.

- **Applicable Rules and Regulations:**

Rules and Regulations Assessment - The facility is subject to the following Georgia State Rules:

- 391-3-1-.02(2)(b) Visible Emissions
- 391-3-1-.02(2)(d) Fuel Burning Equipment
- 391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes
- 391-3-1-.02(3) Sampling
- 391-3-1-.02(2)(tt) VOC Emissions from Major Sources

- **Emission and Operating Standards:**

- 391-3-1-.02(2)(b) Visible Emissions: Limits opacity of air contaminant source to less than 40 %.
- 391-3-1-.02(2)(d) Fuel Burning Equipment: Limits particulate matter from any fuel burning source less than 10 million BTU per hour to 0.5 pounds per million BTU heat input. Actual PM emissions are less than 0.1 pounds per million BTU heat input.
- 391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes: Limits emission of particulate matter from process equipment to 22.96 pounds per hour based on the formula $E = 4.1(P)^{0.67}$, E = emission rate in pounds per hour, P = process input weight rate in tons per hour = 13.08 tons/hr. Actual PM emissions are less than 0.3 pounds per hour.
- 391-3-1-.02(2)(tt) The facility must operate the thermal oxidizer (Source Code C001) combustion zone temperature at or above 760°C (1400°F). This will ensure that VOC emissions are reduced from oven EU-1 rear stack (ST1B) by at least 90 % assuming 100 % capture efficiency. This is the accepted RACT plan.

D. Compliance Status: The facility has not indicated any noncompliance issues in Section 11.10 of their Title V application.

E. Testing, Monitoring and Recordkeeping:

See Sections IV, V, and VI.

F. Operational Flexibility: The facility has not requested any operational flexibility in their Title V application.

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- G. Permit Conditions: The following conditions have been included in the Title V permit and are equipment or process specific.
1. Condition 3.4.1 subjects the three process lines EU-1 through EU-3 and the five flour storage tanks FS1 through FS5 to Rule (b). This limits opacity from process lines EU-1 through EU-3 and the five flour tanks FS1 through FS5 to no greater than forty percent. [391-3-1-.02(b)]
 2. Condition 3.4.2 subjects the three process lines EU-1 through EU-3 and the five flour storage tanks FS1 through FS5 to Rule (e). This limits the particulate matter emissions derived from $E = 4.1*(P)^{0.67}$. At a maximum input rate of 13.08 tons per hour dough, the emission rate can be no more than 22.96 pounds per hour. The facility has PM emissions of less than 0.3 pounds per hour. [391-3-1-.02(e)]
 3. Condition 3.5.2 subjects the three process lines EU-1 through EU-3 to Rule (tt). This requires the facility to utilize all reasonably available control technology (RACT) in controlling VOC emissions from the three process lines EU-1 through EU-3. It has been determined by the Division that RACT is considered to be the control of VOC emissions from oven EU-1 rear stack (ST1B) by at least 90 %. To comply with the Division accepted RACT plan, the thermal oxidizer (source code C001) combustion zone temperature must be maintained at or above 760°C (1400°F).

IV. Testing Requirements (with Associated Recordkeeping and Reporting)

A. General Testing Requirements:

The permit specifies that a performance test may be required to determine compliance with the emission limits in Part 3.0. General conditions requiring notification and submission of a test plan for any source test and specifying test methods to be used are included.

B. Specific Testing Requirements

None of the applicable regulations requires performance testing, therefore this permit does not contain any conditions to require specific testing for any sources.

V. Monitoring Requirements (with Associated Recordkeeping and Reporting)

A. General Monitoring Requirements:

Not Applicable

B. Specific Monitoring Requirements

The facility uses fabric filters to control the flour silos (source codes FS-1 to FS-5). A condition to perform maintenance on the fabric filters and to conduct a Visible Emissions check is included. A condition requiring the reporting of deviations from these operational practices for the fabric filters is also included.

The facility uses a thermal oxidizer (source code C001) to control VOC emissions from oven EU-1. A condition to continuously measure and record the thermal oxidizer (source code C001) combustion zone temperature is included.

C. Recordkeeping and Reporting Requirements :

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence, and the corrective action taken are required to be kept by the Permittee and reporting is required on a semiannual basis.

VI. Other Recordkeeping and Reporting Requirements

A. General Recordkeeping and Reporting Requirements:

General requirements for the maintenance of all records for a period of five years following the date of entry and prompt reporting of excess emissions from process malfunctions or improper maintenance are included in the permit.

B. Specific Recordkeeping and Reporting Requirements:

The existing permit includes a 100 tpy VOC limit. Conditions are included which require that usage records be kept of materials containing VOCs and which provide an equation for calculating an emission factor for VOC emissions from the bread and bun ovens. And finally, a condition is included requiring record keeping of total monthly VOC emissions and notification of the Division if VOC emissions exceed 8.33 tons during any calendar month.

The following emission factor must be used for calculating VOC emissions:

$$\text{VOC Emission Factor} = (0.95*Y_i) + (0.195*t_i) - (0.51*S) - (0.86*ts) + 1.90$$

Y_i = Initial Baker's percent

t_i = Total yeast action time

S = Final baker's percent

ts = Spiking time in hours

This emission factor is from U.S. EPA document number 453/R-92-017 - *Alternative Control Technology Document for Bakery Oven Emissions* December 1992.

VII. Specific Requirements

A. Operational Flexibility

The facility has not indicated a need for operational flexibility.

B. Alternative Requirements

There are no alternative requirements indicated.

C. Insignificant Activities

The following is a list of the facility's insignificant activities as detailed in §4.10 of the Title V permit application.

Table 4: Insignificant Activities

Category	Description of Insignificant Activity	Quantity
Mobile Sources	Cleaning and sweeping of streets and paved surfaces	N.A.
Maintenance, Cleaning, and Housekeeping	4. Cold cleaners having an air/vapor interface of not more than 10 square feet and that do not use a halogenated solvent.	2
Industrial Operations	2. Any of the following processes or process equipment which are electrically heated or which fire natural gas, LPG or distillate fuel oil at a maximum total heat input rate of not more than 5 MMBTU/hr. v) Bakery ovens and confection cookers.	2
	3. Carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, shot blasting, shot peening, or polishing; ceramics, glass, leather, metals, plastics, rubber, concrete, paper stock or wood, also including roll grinding and ground wood pulping stone sharpening, provided that: i) Activity is performed indoors; and ii) No significant fugitive particulate emissions enter the outdoor atmosphere; and iii) No visible emissions enter the outdoor atmosphere.	2
Storage Tanks and Equipment	2. All petroleum liquid storage tanks with a capacity of less than 40,000 gallons storing liquid with a true vapor pressure of equal to or less than 2.0 psia as stored.	1

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Category	Description of Insignificant Activity	Quantity
	5. Gasoline storage and handling equipment at loading facilities handling less than 20,000 gallons per day or at vehicle dispensing facilities.	1

D. Temporary Sources

There are no temporary sources indicated.

E. Short-Term Activities

The facility has not indicated any short term activities.

F. Compliance Schedule/Progress Reports

Not Applicable

G. Emissions Trading

Not Applicable

H. Acid Rain Requirements

The facility has not indicated applicability to the acid rain requirement.

I. Prevention of Accidental Releases

The facility is not subject to the Accidental Release Prevention Program.

J. Stratospheric Ozone Protection Requirements

The facility has listed applicability according to Section 3.11 of their Title V application.

K. Pollution Prevention

The facility has not indicated any pollution prevention controls.

L. Specific Conditions

All conditions have been covered elsewhere in the review.

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Addendum

Facility Comments on Draft Permit:

Comments concerning draft Title V Permit No. 2051-089-0239-V-01-0 were submitted on August 20, 1998 by The Earthgrains Baking Company, Inc.- Atlanta Bakery. The facility had a total of fourteen comments concerning the draft permit. All of the comments were minor editorial changes and do not pertain to any major changes in the permit conditions. The header on all pages of the permit and the facility name in Section 1.3 have been changed from "The Earthgrains Companies, Inc. - Atlanta Bakery" to "The Earthgrains Baking Companies, Inc. - Atlanta Bakery". All regulatory citations have been changed from "391-3-1-.02..." to "391-3-1-.02(2)...". The "R" in Permit Condition 3.4.2 was is changed to a "P". The "Ts" in Condition 6.2.2 was changed to "ts". The regulatory citation in Permit Condition 7.2.2 has been changed from "391-3-1-.03(10)7" to "391-3-1-.03(10)(b)7". In Attachment B, the word "per" has been inserted between the words "year" and "process". In the third row, second column of the third table in Attachment B, the number of units has been changed to 12 instead of 5. The regulatory citations will not be repeated in Permit Conditions 7.10.1 and 8.22.1. On the permit cover page, "Part 70 Permit" will not be changed to "Part 70 Operating Permit". The permit header will not be changed from "TITLE V DRAFT PERMIT" to "PART 70 OPERATING PERMIT". The wording of Condition 4.1.1 will not be altered from "The Permittee shall cause to be conducted a performance test" to "The Permittee shall conduct a performance test". The words "White Paper #1" in Condition 7.6 will not be changed.