

**Louisville Metro Air Pollution Control District**  
**850 Barret Ave., Louisville, Kentucky 40204**  
**27 June 2015**

**Federally Enforceable District Origin Operating Permit**  
**Statement of Basis**

**Company:** The Keebler Company

**Plant Location:** 2287 Ralph Avenue, Louisville, KY 40216

**Date Application Received:** 01 June 2012; 12 October 2012; 23 April 2015

**Date of Draft Permit:** 18 July 2013; 27 June 2015

**District Engineer:** Eva Addison

**Permit No:** O-1610-15-F

**Plant ID:** 1610

**SIC Code:** 2052

**NAICS:** 311821

**AFS:** 1610

**Introduction:**

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), and particulate matter less than 10 microns (PM<sub>10</sub>); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>), unclassifiable for the 2012 standard for particulate matter less than 2.5 micron (PM<sub>2.5</sub>) and partial non-attainment area for sulfur dioxide (SO<sub>2</sub>).

**Application Type/Permit Activity:**

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

**Compliance Summary:**

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

**I. Source Information**

1. **Product Description:** The Keebler Company is a baked goods manufacturing facility.
2. **Process Description:** The raw materials are grinded and mixed to produce batter that is mixed with flavorings before being sent through baking ovens.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.

**Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Seven (7) natural gas baking ovens used for manufacturing baked food products One (1) cleaning and sanitizing operation
U2	One (1) Bauermeister sugar grinding system, model UMT 4.3
U3	One (1) invert sugar process which converts sucrose to fructose and glucose using heat and hydrochloric acid
IA1	One (1) York Shipley natural gas boiler, with a capacity of 5.021 MMBTU/hr
IA2	Three (3) Imeco XLP evaporative condensers: One (1) model XL-415, with a capacity of 600 gpm One (1) model XL-630, with a capacity of 900 gpm One (1) model XL-660, with a capacity of 900 gpm One (1) railcar unloading operation Four (4) flour silos (Flour Silos No. 1 – 4) Two (2) sugar silos (Sugar Silos No. 1 and 2) Ten (10) process hoppers (Hoppers 1 – 10) Ten (10) process mixers (Mixers 1 – 10) Two (2) CO <sub>2</sub> powdered sugar mixers (CO <sub>2</sub> Powdered Sugar Mixers No. 1 and 2)

4. **Fugitive Sources:** There are no fugitive source emissions at this facility.
5. **Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	29510-13-F	09/17/2013	7/18/2013	Initial	Entire Permit	Initial Permit Issuance

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
N/A	O-1610-15-F	0x/xx/2015	06/27/2015	Significant Revision	Emission Unit 1	Incorporation of construction permit C-1610-1000-15-F for new Oven No. 2 to replace the old Oven No. 2

**6. Emission Summary:**

Pollutant	District Calculated Actual Emissions (tn/yr) 2008 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	4.69	No
NO <sub>x</sub>	5.59	No
SO <sub>2</sub>	0.0335	No
PM <sub>10</sub>	5.08	No
VOC	25.41	Yes
Total HAPs	0.105	No
Single HAP	0.101	No
GHG – CO <sub>2</sub> <sup>1</sup>	21,234.41	No
GHG - N <sub>2</sub> O <sup>1</sup>	0.39	No
GHG - CH <sub>4</sub> <sup>1</sup>	0.41	No
GHG – CO <sub>2</sub> e <sup>1</sup>	21,454.21	No

<sup>1</sup> The greenhouse gas (GHG) emission values listed in this table are the current potential emissions, not the actual emissions from the 2008 Emission Inventory.

**7. Applicable Requirements:**

- PSD       40 CFR 60       SIP       40 CFR 63  
 NSR       40 CFR 61       District-Origin       Other

**8. MACT Requirements:** The source has no future MACT requirements.

**9. Referenced Federal Regulations in Permit:** The Keebler Company is not subject to any federal regulations.

**II. Regulatory Analysis**

**1. Acid Rain Requirements:** The Keebler Company is not subject to the Acid Rain Program.

**2. Stratospheric Ozone Protection Requirements:** Title VI of the CAAA

regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. The Keebler Company does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. **Prevention of Accidental Releases 112(r):** The Keebler Company does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** The Keebler Company is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

The Keebler Company is a potential major source for the pollutant VOC. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

The Keebler Company requested a plant wide emission limit of 99 tons per year for the pollutant VOC.

Regulations 5.00, 5.01, 5.20, 5.21, 5.21, and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 – Baking Ovens/Cleaning and Sanitizing**i. **Equipment:**

<b>P/PE</b>	<b>Capacity</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E1: Baking Oven 2	6.48 MMBTU/hr	2015	7.09, 7.25	Regulation 7.09 establishes requirements for CO and SO <sub>2</sub> for equipment installed after 4/19/1972; Regulation 7.25 establishes requirements for VOC for equipment installed after 6/13/1979
E2: Baking Oven 3	5.282 MMBTU/hr	1954	6.10, 6.24	Regulation 6.10 establishes requirements for CO and SO <sub>2</sub> for equipment installed before 4/19/1972; Regulation 6.24 establishes requirements for VOC for equipment installed before 6/13/1979
E3: Baking Oven 4	3.936 MMBTU/hr	2004	7.09, 7.25	Regulation 7.09 establishes requirements for CO and SO <sub>2</sub> for equipment installed after 4/19/1972; Regulation 7.25 establishes requirements for VOC for equipment installed after 6/13/1979
E4: Baking Oven 5	4.56 MMBTU/hr	1976	6.24, 7.09	Regulation 6.24 establishes requirements for VOC for equipment installed before 6/13/1979; Regulation 7.09 establishes requirements for equipment installed after 4/19/1972
E5: Baking Oven 7	7.9 MMBTU/hr	1980	7.06, 7.25	Regulation 7.25 establishes requirements for VOC for equipment installed after 6/13/1979 Regulation 7.06 establishes requirements for PM and SO <sub>2</sub> for equipment installed after 9/1/1976
E6: Baking Oven 8	4.5 MMBTU/hr	1974	6.24, 7.06	Regulation 6.24 establishes requirements for VOC for equipment installed before 6/13/1979 Regulation 7.06 establishes requirements for PM and SO <sub>2</sub> for equipment installed after 9/1/1976

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E7: Baking Oven 9	6.232 MMBTU/hr	2005	7.09, 7.25	Regulation 7.09 establishes requirements for CO and SO <sub>2</sub> for equipment installed after 4/19/1972; Regulation 7.25 establishes requirements for VOC for equipment installed after 6/13/1979
E8: Equipment Cleaning	9,251 gal/yr	N/A	7.25	Regulation 7.25 establishes requirements for VOC for equipment installed after 6/13/1979
E9: Equipment Sanitizing	4,669 gal/yr	N/A	7.25	

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 6.24, section 3.3 specifies emission limits of 3,000 pounds per day per oven and 450 pounds per hour per oven for baking ovens 3, 5, and 8. The equipment subject to Regulation 6.24 cannot exceed the emission limits in the regulation; therefore, there are no monitoring or recordkeeping requirements for this equipment.
- (b) As per Regulation 7.25, section 3.1 and the BACT Analysis submitted by the source, the VOC emissions from baking ovens 2, 4, 7, and 9 shall not exceed the following limits:

Baking Oven	VOC Emission Limit per Twelve (12) Consecutive Month Period
Oven No. 2	10.0 tons
Oven No. 4	6.0 tons
Oven No. 7	11.0 tons
Oven No. 9	9.5 tons

- (c) Per Regulation 7.25, section 3.1, the VOC emissions from the cleaning and sanitizing equipment shall be limited to less than 5.0 tons per 12 consecutive month period. (A BACT determination is required to be performed for any future construction/modification subject to Regulation 7.25 for any emissions outside of the 5 tpy limit.)

2) **PM**

Regulation 7.06, section 4.1.4 specifies an emission limit of 0.56 pounds per million BTU actual total heat input per oven for baking ovens 7 and 8. There are no monitoring or record keeping requirements for PM compliance.

3) **Opacity**

Regulation 7.06, section 4.2 establishes an opacity standard of less than 20% for baking ovens 7 and 8. There are no monitoring or record keeping requirements for Opacity compliance.

4) **CO**

Regulation 6.10, section 5 and Regulation 7.09, section 5.1 establish standards that require CO gases to be burned at 1,300°F for a minimum of 5 seconds for baking ovens 2, 3, 4, 5, and 9. There are no monitoring or record keeping requirements for CO compliance.

5) **SO<sub>2</sub>**

- (a) Regulation 6.10, section 4 establishes an SO<sub>2</sub> standard of less than 2,000 part per million by volume at 0% oxygen for baking oven 3. There are no monitoring or record keeping requirements for SO<sub>2</sub> compliance.
- (b) Regulation 7.09, section 4 establishes an SO<sub>2</sub> standard of less than 28.63 grains per 100 dry standard cubic feet at 0% excess oxygen for baking ovens 2, 4, 5, and 9. There are no monitoring or record keeping requirements for SO<sub>2</sub> compliance.
- (c) Regulation 7.06, section 5.1.1 specifies an emission limit of 1.0 pounds per million BTU actual total heat input per oven for baking ovens 7 and 8. There are no monitoring or record keeping requirements for SO<sub>2</sub> compliance.

6) **TAC**

As per Regulation 5.21, section 4.3, ammonia emissions discharged from each baking oven or the cleaning or sanitizing equipment shall not exceed de minimis levels per piece of equipment.

c. **Emission Unit U2 – Sugar Grinding**i. **Equipment:**

P/PE	Install Date	Applicable Regulation	Basis for Applicability
E8: Sugar Grinder	2010	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after 9/1/1976

ii. **Control Devices**

P/PE	Install Date	Capacity	Pollutant Controlled
C1: Donaldson Torit Dust Collection System, model DF04-16 EDAP	2010	5,500 acfm	PM, PM <sub>10</sub>

iii. **Standards/Operating Limits**1) **PM**

- (a) The emission standard for PM at this emission point with a throughput of less than 30 tons per hour is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight, tons/hr})^{0.62}$$

- (b) This equipment cannot meet the PM standard uncontrolled, therefore, Regulation 2.03, section 5.1 requires that the control device shall be run at all times when the equipment is in operation and the equipment shall be operated and maintained in a manner consistent with good air pollution control practice for minimizing emissions.

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20% for this equipment.

d. **Emission Unit U3 – Invert Sugar Process**

i. **Equipment:**

P/PE	Install Date	Applicable Regulation	Basis for Applicability
E9: Invert Sugar Process	1997	5.00, 5.01, 5.20, 5.21, 5.22, 5.23	Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 establish requirements for TAC emissions

ii. **Standards/Operating Limits**

**TAC**

Regulations 5.00 and 5.21 require that emissions of any TAC shall not exceed the environmentally acceptable (EA) levels.

**III. Other Requirements**

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:** There are no records of any violations of the terms of the present or prior construction or operating permits.
6. **Calculation Methodology or Other Approved Method:**

Baking Ovens/Cleaning and Sanitizing (U1): Emission factors from AP-42, Chapter 1.4, Natural Gas Combustion, and the calculation methods shown below will be used to show compliance with the emission limits in the operating permit unless other methods are approved by the District. TAC emissions shall be determined using the calculation method shown below. Unless other methods are approved by the District.

- a. VOC emissions from the baking ovens shall be calculated, in tons, based on the daily flavoring throughput records, using the following formulas, or other method approved by the District:

- i. For flavorings containing Low Volatile Chemicals:

$$\text{VOC (ton/month)} = (\text{X lb of flavoring/month}) * (\text{LVC \%}) * (\text{LVC Emission Percentage}) * (1 \text{ ton}/2000 \text{ lb})$$

- ii. For flavorings containing Ethanol:

$$\text{VOC (ton/month)} = (\text{X lb of flavorings/month}) * (\text{Ethanol \%}) * (1 \text{ ton}/2000 \text{ lb})$$

- b. VOC emissions from the cleaning and sanitizing equipment shall be calculated, in tons, based on the daily material throughput records, using the following formula, or other method approved by the District:

- i. For cleaning and sanitizing materials:

$$\text{VOC (ton/month)} = (\text{X lb of material/month}) * (\text{Density, lb/gal}) * (\text{VOC Content, \%}) * (1 \text{ ton}/2000 \text{ lb})$$

- ii. The source shall obtain approval from the District for VOC calculation methods for any additional equipment installed.

- c. Ammonia emissions from the baking ovens shall be calculated, in pounds, based on the daily material throughput records required by the TAC standard, using the following formula, or other method approved by the District:

- i. For cleaning and sanitizing materials:

$$\text{Ammonia (lb/month)} = (\text{X lb of material/month}) * (\text{Ammonium Bicarbonate \%}) * (\text{Ammonia \%})$$

**7. Insignificant Activities**

Description	Quan.	PTE (tpy)	Basis for Exemption
York Shipley Natural Gas Boiler	1	2.16 NO <sub>x</sub>	Regulation 1.02, Appendix A
Evaporative Condensers	3	4.325 PM <sub>10</sub>	Regulation 1.02
Railcar Unloading	1	0.207 PM <sub>10</sub>	Regulation 1.02
Flour Silos	4	0.938 PM <sub>10</sub>	Regulation 1.02
Sugar Silos	2	0.304 PM <sub>10</sub>	Regulation 1.02
Process Hoppers	10	0.63 PM <sub>10</sub>	Regulation 1.02
Process Mixers	10	0.63 PM <sub>10</sub>	Regulation 1.02
CO <sub>2</sub> Powdered Sugar Mixers	2	1.49 PM <sub>10</sub>	Regulation 1.02

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 4) The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

**8. Basis of Regulation Applicability for IA units**

a. **Emission Unit IA1 – Boiler**

i. **Equipment**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E10: York Shipley Natural Gas Boiler	5.021 MMBTU/hr	N/A	7.06	Regulation 7.06 establishes requirements for PM and SO <sub>2</sub> for indirect heat exchangers installed after 4/9/1972

ii. **Standards/Operating Limits**

1) **PM**

Regulation 7.06, section 4.1.4 establishes a particulate matter limit of 0.56 pounds per million BTU actual total heat input. There are no monitoring or record keeping requirements for PM compliance.

2) **Opacity**

Regulation 7.06, section 3.1.1 establishes an opacity standard of less than 20% for this equipment. There are no monitoring or record keeping requirements for Opacity compliance.

3) **SO<sub>2</sub>**

Regulation 7.06, section 4.1.4 establishes a sulfur dioxide limit of 1.0 pounds per million BTU actual total heat input. There are no monitoring or record keeping requirements for SO<sub>2</sub> compliance.

b. **Emission Unit IA2 – Miscellaneous Equipment**

i. **Equipment**

<b>P/PE</b>	<b>Install Date</b>	<b>Applicable Regulation</b>	<b>Basis for Applicability</b>
E11: Evaporative Condenser 1, model XLP XL-415	N/A	7.08	Regulation 7.08 establishes requirements for PM for equipment installed after 9/1/1976
E12: Evaporative Condenser 2, model XLP XL-630	N/A	7.08	
E13: Evaporative Condenser 3, model XLP XL-660	N/A	7.08	
E14: Railcar Unloading	2003	7.08	
E15: Flour Silos	1973	6.09	Regulation 6.09 establishes requirements for PM for equipment installed before 9/1/1976
E16: Sugar Silos	1973	6.09	
E17: Process Hoppers	N/A	6.09	
E18: Process Mixers	N/A	6.09	
E19: CO <sub>2</sub> Powdered Sugar Mixers	1973	6.09	

ii. **Control Devices**

<b>P/PE</b>	<b>Install Date</b>	<b>Capacity</b>	<b>Pollutant Controlled</b>
C1: Donaldson Torit Dust Collection	2010	1,500 acfm	PM, PM <sub>10</sub>

System, model TD-486			
C1: Donaldson Torit Dust Collection System, model TD-486	2010	1,500 acfm	PM, PM <sub>10</sub>
C1: Donaldson Torit Dust Collection System, model TD-486	2010	3,000 acfm	PM, PM <sub>10</sub>

iii. **Standards/Operating Limits**

1) **PM**

- (a) The emission standard for PM at each emission point constructed before September 1, 1976 with a process throughput of less than 30 tons per hour is determined in accordance with Regulation 6.09, section 3.2 as follows:

$$\text{PM lb/hr limit} = 4.10 (\text{process weight, tons/hr})^{0.67}$$

There are no monitoring or record keeping requirements for PM compliance.

- (b) The emission standard for PM at each emission point constructed after September 1, 1976 with a process throughput of less than 30 tons per hour is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight, tons/hr})^{0.62}$$

There are no monitoring or record keeping requirements for PM compliance.

- (c) The emission standard for PM at each emission point constructed after September 1, 1976 with a process throughput of greater than 30 tons per hour is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 17.31 (\text{process weight, tons/hr})^{0.16}$$

There are no monitoring or record keeping requirements for PM compliance.

2) **Opacity**

Regulation 6.09, section 3.1 and regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20% for this equipment. There are no monitoring or record keeping requirements for Opacity compliance.