



800 Morrison Road
Gahanna, OH 43230
P (614) 863-3113
F (614) 863-0475

February 27, 2025

Kentucky Division for Air Quality
Permit Support Section
300 Sower Blvd., 2nd Floor
Frankfort, KY 40601

RE: Sister Schubert's Homemade Rolls, Inc.
900 Top Quality Drive, Horse Cave, Kentucky
Conditional Major Permit Renewal Application
Source I.D. #21-099-00036
Agency Interest # 82597
Permit I.D. F-20-004

To Whom It May Concern:

On behalf of Sister Schubert's Homemade Rolls, Inc. (Sister Schubert's), please find enclosed the Conditional Major Permit Renewal Application for the Sister Schubert's facility. The existing permit is set to expire on August 2nd, 2025. Troy Tabor, Environmental Control Supervisor with the Kentucky Division for Air Quality (DAQ) approved an extension for submittal of the renewal application by February 28th, 2025. This permit renewal application incorporates facility changes since the most recent significant revision.

In accordance with Kentucky Regulation 401 KAR 52:030 Sections 4 and 12, we are submitting the required DEP7007 application forms and accompanying information for the Renewal.

If you have questions or comments regarding this submittal or the enclosed information, please feel free to contact Andrew Wehr (614) 671-6523 or myself (614) 256-0363.

Thank you,

A handwritten signature in black ink that reads 'Lisa Schweder'.

Lisa Schweder, P.E.
Environmental Project Engineer
Terracon Consultants, Inc.

A handwritten signature in black ink that reads 'Lizzette R. Barrow'.

Lizzette R. Barrow, P.E.
Department Manager
Terracon Consultants, Inc.

Sister Schubert's Homemade Roll, Inc. Representative:

A handwritten signature in black ink that reads 'Jason Harper'.

Jason Harper
Plant Manager

PERMIT RENEWAL APPLICATION
FOR
CONDITIONAL MAJOR PERMIT F-20-004
(Per 401 KAR 52:030 Sections 4 and 12)
FOR
SISTER SCHUBERT'S HOMEMADE ROLLS, INC.
HORSE CAVE, KENTUCKY

PREPARED FOR:

SISTER SCHUBERT'S HOMEMADE ROLLS, INC.
900 TOP QUALITY DRIVE
HORSE CAVE, KENTUCKY 42749

PREPARED BY:

TERRACON CONSULTANTS, INC.
800 MORRISON ROAD
COLUMBUS, OHIO 43230

FEBRUARY 2025

Introduction

Sister Schubert's Homemade Rolls, Inc. (Sister Schubert's), located in Horse Cave, Kentucky, is currently operating a bakery facility and operating under SIC code 2051, Bread and Other Bakery Products, except Cookies and Crackers, and under Air Permit Number F-020-004. The existing permit is set to expire August 2nd, 2025, therefore, Sister Schubert's is submitting this permit renewal application incorporating changes made since the most recent significant revision. No changes to currently permitted sources have occurred since the most recent significant revision, nor will any additional sources be added during this renewal period without revision.

Changes requested to the permit since the most recent source wide permit action include:

- Calculations for the potential-to-emit (PTE) values have been updated to more accurately reflect emissions, including an increase in operational hours from 5 days a week to 7 days a week, due to market demand. Monday through Thursday, the facility will operate approximately 6:30 AM to 4:00 AM running all four lines. The 4:00 AM to 6:30 AM time frame will be utilized as down time to clean the lines. One line will operate 24-hours Friday through Sunday. A second line may run Friday through Sunday depending on demand.
- Other changes requested:
 - o Sister Schubert's is requesting the removal of the EU64 Cummins DSHAC Diesel-Fired Emergency Generator. The facility does not own or operate a third emergency generator and does not plan to.
 - o Sister Schubert's is requesting that EU41a-d and EU65a-d be combined and renamed. The facility no longer uses one specific brand of inks, make-up fluids, or clean-up solvents. The facility also no longer uses Marsh Ink and does not plan to in the future. The inks, make-up fluids, and solvents that are used at the facility in ink jet stenciling are used across all Lines, 1-4. Therefore, Sister Schubert's is requesting that EU41a-d and EU65a-d be combined into "EU 41a Inks", "EU 41b Make-Up Fluids", and "EU 41c Solvents and Additives" to cover and more accurately reflect and track current Line 1-4 usages.
 - o Sister Schubert's is requesting to add EU81 Sugar Silos - Truck Unloading and EU82 Sugar Silos - Sugar Handling and Mixing to the list of Insignificant Activities. There are 3 sugar silos and 1 sugar bin located indoors that feed to Stack ID 78 and 79 respectively (these are the same stacks as the flour silos).
 - o Sister Schubert's is requesting to add EU80 Bagged Flour Handling to the list of Insignificant Activities. Bagged flour handling occurs inside the facility and is considered a fugitive emission.

DEP7007 PERMIT APPLICATION FORMS

DEP7007AI

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007AI**Administrative Information**

- ___ Section AI.1: Source Information
___ Section AI.2: Applicant Information
___ Section AI.3: Owner Information
___ Section AI.4: Type of Application
___ Section AI.5: Other Required Information
___ Section AI.6: Signature Block
___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: Sister Schubert's Homemade Rolls, Inc.

KY EIS (AFS) #: 21- 099-00036

Permit #: F-20-004

Agency Interest (AI) ID: 82597

Date: 02/27/2025

Section AI.1: Source Information

Physical Location	Street:	900 Top Quality Drive		
Address:	City:	Horse Cave	County:	Hart
			Zip Code:	42749
Mailing Address:	Street or P.O. Box:	900 Top Quality Drive		
	City:	Horse Cave	State:	KY
			Zip Code:	42749

Standard Coordinates for Source Physical Location

Longitude: -85.9145 (decimal degrees) **Latitude:** 37.16112222 (decimal degrees)

Primary (NAICS) Category: Commercial Bakeries **Primary NAICS #:** 311812

Classification (SIC) Category:	Bread and Other Bakery Products, Except Cookies and Crackers		Primary SIC #:	2051	
Briefly discuss the type of business conducted at this site:	Sister Schubert's Homemade Rolls, Inc. is a bakery in Horse Cave, KY focusing on the bread baking process. The facility is permitted to operate four bread baking lines (Lines 1, 2, 3, and 4). The bread baking process is basically the same for all four lines. The process consists of mixing the raw ingredients of flour, water, sugar, shortening and/or butter, salt, yeast, and eggs, followed by proofing, baking, packaging, and shipping.				
Description of Area Surrounding Source:	☐ Rural Area ☐ Urban Area	☐ Industrial Park ☒ Industrial Area	☐ Residential Area ☐ Commercial Area	Is any part of the source located on federal land? ☐ Yes ☒ No	Number of Employees: 330
Approximate distance to nearest residence or commercial property:	~220 feet, northwest <u>adjacent to the property</u>		Property Area:	26.2 acres	
Is this source portable? ☐ Yes ☒ No					
What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?					
NPDES/KPDES:	☒ Currently Hold ☐ Need ☐ N/A				
Solid Waste:	☐ Currently Hold ☐ Need ☒ N/A				
RCRA:	☐ Currently Hold ☐ Need ☒ N/A				
UST:	☐ Currently Hold ☐ Need ☒ N/A				
Type of Regulated Waste Activity:	☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☒ N/A				

Section AI.2: Applicant Information**Applicant Name:** Sister Schubert's Homemade Rolls, Inc.**Title:** (if individual) _____**Mailing Address:** **Street or P.O. Box:** 900 Top Quality Drive**City:** Horse Cave **State:** Kentucky **Zip Code:** 42749**Email:** (if individual) _____**Phone:** _____**Technical Contact****Name:** Jason Harper**Title:** Plant Manager**Mailing Address:** **Street or P.O. Box:** 900 Top Quality Drive**City:** Horse Cave **State:** Kentucky **Zip Code:** 42749**Email:** jharper@marzetti.com**Phone:** _____**Air Permit Contact for Source****Name:** Jason Harper**Title:** Plant Manager**Mailing Address:** **Street or P.O. Box:** 900 Top Quality Drive**City:** Horse Cave **State:** Kentucky **Zip Code:** 42749**Email:** jharper@marzetti.com**Phone:** _____

Section AI.3: Owner Information

☒ **Owner same as applicant**

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____
City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name		Position	
_____		_____	
_____		_____	
_____		_____	

Section AI.4: Type of Application

Current Status:	☐ Title V	☒ Conditional Major	☐ State-Origin	☐ General Permit	☐ Registration	☐ None
Requested Action: (check all that apply)	☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment		
	☒ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide Operating Permit		
	☐ 502(b)(10) Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice		
	☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities		
	☐ Ownership Change	☐ Closure				
Requested Status:	☐ Title V	☒ Conditional Major	☐ State-Origin	☐ PSD	☐ NSR	☐ Other: _____

Is the source requesting a limitation of potential emissions?

☒ Yes ☐ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter	_____	☐ Single HAP	_____
☒ Volatile Organic Compounds (VOC)	90 TPY	☐ Combined HAPs	_____
☐ Carbon Monoxide	_____	☐ Air Toxics (40 CFR 68, Subpart F)	_____
☐ Nitrogen Oxides	_____	☐ Carbon Dioxide	_____
☐ Sulfur Dioxide	_____	☐ Greenhouse Gases (GHG)	_____
☐ Lead	_____	☐ Other	_____

For New Construction:

Proposed Start Date of Construction:
(MM/YYYY)

Proposed Operation Start-Up Date: (MM/YYYY)

For Modifications:

Proposed Start Date of Modification:
(MM/YYYY)

Proposed Operation Start-Up Date: (MM/YYYY)

Applicant is seeking coverage under a permit shield.

☐ Yes

☒ No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- | | |
|--|---|
| ☐ DEP7007A Indirect Heat Exchangers and Turbines | ☐ DEP7007CC Compliance Certification |
| ☐ DEP7007B Manufacturing or Processing Operations | ☒ DEP7007DD Insignificant Activities |
| ☐ DEP7007C Incinerators and Waste Burners | ☐ DEP7007EE Internal Combustion Engines |
| ☐ DEP7007F Episode Standby Plan | ☐ DEP7007FF Secondary Aluminum Processing |
| ☐ DEP7007J Volatile Liquid Storage | ☐ DEP7007GG Control Equipment |
| ☐ DEP7007K Surface Coating or Printing Operations | ☐ DEP7007HH Haul Roads |
| ☐ DEP7007L Mineral Processes | ☐ Confidentiality Claim |
| ☐ DEP7007M Metal Cleaning Degreasers | ☐ Ownership Change Form |
| ☒ DEP7007N Source Emissions Profile | ☐ Secretary of State Certificate |
| ☐ DEP7007P Perchloroethylene Dry Cleaning Systems | ☐ Flowcharts or diagrams depicting process |
| ☐ DEP7007R Emission Offset Credit | ☐ Digital Line Graphs (DLG) files of buldings, roads, etc. |
| ☐ DEP7007S Service Stations | ☐ Site Map |
| ☐ DEP7007T Metal Plating and Surface Treatment Operations | ☐ Map or drawing depicting location of facility |
| ☐ DEP7007V Applicable Requirements and Compliance Activities | ☐ Safety Data Sheet (SDS) |
| ☐ DEP7007Y Good Engineering Practice and Stack Height Determination | ☐ Emergency Response Plan |
| ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units | ☐ Other: _____ |
| ☐ DEP7007BB Certified Progress Report | |

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Jason Harper

02/27/2025

Authorized Signature

Date

Jason Harper

Plant Manager

Type or Printed Name of Signatory

Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

DEP7007 PERMIT APPLICATION FORMS

DEP7007N

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007N Source Emissions Profile ___ Section N.1: Emission Summary ___ Section N.2: Stack Information ___ Section N.3: Fugitive Information ___ Section N.4: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI
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Source Name:	Sister Schubert's Homemade Rolls, Inc.
KY EIS (AFS) #:	21- 099-00036
Permit #:	F-20-004
Agency Interest (AI) ID:	82597
Date:	02/27/2025

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
80	EU80 Bagged Flour - Handling and Mixing	80	EU80 Bagged Flour - Handling and Mixing	N/A	N/A	Fugitive	0.105 tph	Particulate Matter (PM)	0.061 lbs/ton	AP-42	N/A	N/A	0.006	0.006	0.028	0.028
81	EU81 Sugar Silos - Truck Unloading	81	EU81 Sugar Silos - Truck Unloading	N/A	N/A	78	8 tph	Particulate Matter (PM)	0.025 lbs/ton	Sugar silos emissions factors from Louisville Metro Air Pollution Control District, FEDOP O-1610-23-F, effective date 1.5.24	N/A	N/A	0.2	0.2	0.068	0.068
82	EU82 Sugar Silos - Sugar Handling and Mixing	82	EU82 Sugar Silos - Sugar Handling and Mixing	N/A	N/A	79	0.75 tph	Particulate Matter (PM)	0.072 lbs.ton	Sugar silos emissions factors from Louisville Metro Air Pollution Control District, FEDOP O-1610-23-F, effective date 1.5.24	N/A	N/A	0.054	0.054	0.116	0.116

Section N.2: Stack Information**UTM Zone:**

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter (ft)	Height (ft)	Base Elevation (ft)	Northing (m)	Easting (m)	Flowrate (acfm)	Temperature (° F)	Exit Velocity (ft/sec)
79 Insignificant Activity	EU81: Flour and sugar storage silo - Handling/Mixing	1.5	38		4105.6	629.8	4000	72	37.73
80 Insignificant Activity	EU82: Flour and sugar storage silo - truck unloading	1.5	38		4105.6	629.8	4000	72	37.73

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side (ft)	Length of the Y Side (ft)	Northing (m)	Easting (m)	Release Temperature (°F)	Release Height (ft)
80	EU80 Bagged Flour - Handling and Mixing	80	460	855	403719.79	4113368.36	Ambient	Doorway height

Section N.4: Notes, Comments, and Explanations

DEP7007 PERMIT APPLICATION FORMS

DEP7007DD

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007DD**Insignificant Activities**

___ Section DD.1: Table of Insignificant Activities

___ Section DD.2: Signature Block

___ Section DD.3: Notes, Comments, and Explanations

Source Name:Sister Schubert's Homemade Rolls, Inc.**KY EIS (AFS) #:**21- 099-00036**Permit #:**F-15-026 (R2)**Agency Interest (AI) ID:**82597**Date:**02/27/2025**Section DD.1: Table of Insignificant Activities**

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
EU80	Bagged flour handling	N/A	N/A	See Attached Calculations
EU81	Sugar Silos - Truck Unloading	Sugar Bin 1-4: Sugar Silo - truck unloading	401 KAR 59:010	See Attached Calculations
EU82	Sugar Silos - Sugar Handling and Mixing	Sugar Bin 1-4: Sugar Silo - sugar handling/mixing	402 KAR 59:010	See Attached Calculations

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:

Authorized Signature

Jason Harper

Type/Print Name of Signatory

Date

Plant Manager

Title of Signatory

Section DD.3: Notes, Comments, and Explanations

Calculations

2025 Permit Renewal - Potential to Emit

	Potential Emissions tpy										HAPs tpy		
	PM2.5	PM10	SO2	NOx	CO	VOC*	Lead	PM total	CO2	Methane	Nitrous Oxide (N2O)	Chromium	Toluene
Seven Natural Gas-Fired Indirect Heat Exchangers	0.127	0.382	0.040	6.699	5.627	0.368	0.00003	0.509	8038.588	0.154	0.147	0.000094	0.00023
Break Baking Chamber Ovens, Lines 1-4	-	-	-	-	-	117.083	-	-	-	-	-	-	-
Ink Jet Stencil Lines	2.111	2.111	-	-	-	31.116	-	2.111	-	-	-	1.57059	-
Three Diesel-Fired Emergency Generators	0.055	0.055	0.052	0.788	0.170	0.023	-	0.055	0.055	-	-	-	-
Insignificant Activities Silos	0.266	1.577	-	-	-	-	-	5.093	-	-	-	-	-
Insignificant Activities Heaters	0.371	1.113	0.117	19.526	16.402	1.074	0.00010	1.484	23431.454	0.449	0.430	0.0003	0.0007
Totals tpy	2.930	5.238	0.209	27.013	22.199	149.664	0.00013	9.252	31470.098	0.603	0.577	1.5710	0.0009

*Requested VOC voluntary emissions limitation of 90 tpy

Sister Schubert's Horse Cave
PTE 2025 Emergency Diesel Generators
Permit # F-20-004 Renewal

AP-42, Chapter 3.3, Table 3.3-1 and 3.3-2 Emission Factors							
PM10	PM2.5	Pmtotal	SO2	Nox	VOC	CO2	CO
lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal
42.47	42.47	42.47	39.73	604.17	47.95	42.47	130.15

Three Diesel-Fired Emergency Generators

Emissions Unit	Power Output hp	PTE Hours/Year	Fuel Input Mgal/hr	PM10 Emissions lbs/hr	PM10 Emissions tpy	PM2.5 Emissions lbs/hr	PM2.5 Emissions tpy	PMtotal Emissions lbs/hr	PMtotal Emissions tpy	SO2 Emissions lbs/hr	SO2 Emissions tpy	NOx Emissions lbs/hr	NOx Emissions tpy	VOC Emissions lbs/hr	VOC Emissions tpy	CO2 Emissions lbs/hr	CO2 Emissions tpy	CO Emissions lbs/hr	CO Emissions tpy
45	364	100	0.0097	0.412	0.021	0.412	0.021	0.412	0.021	0.385	0.019	5.860	0.293	0.465	0.023	0.412	0.021	1.262	0.063
46	364	100	0.0164	0.697	0.035	0.697	0.035	0.697	0.035	0.652	0.033	9.908	0.495	0.000	0.000	0.697	0.035	2.134	0.107
					0.055		0.055		0.055		0.052		0.788		0.023		0.055		0.170

Notes:
Emission Factors from Ap 42, Chapter 3.3, Table 3.3-1 and 3.3-2, converted to lb/Mgal using 137,000 btu/gal
VOC factor chosen from AP-42, Table 3.3-1, TOC Exhaust
100 hours per year for emergency generator maintenance and readiness testing

Emissions Unit	Used on:	Facility Name	Description	VOC content lb/gal	Chromium content lb/gal	PM/PM10/PM2.5 content lb/gal	Usage gal/hr	Potential hours/yr	VOC Emissions lb/hr	VOC Emissions tpy	Chromium Emissions lb/hr	Chromium Emissions tpy	PM/PM10/PM2.5 Emissions lb/hr	PM/PM10/PM2.5 Emissions tpy
EU 41a Inks and Ink Additives	Lines 1-4	4500 Standard Cart	Ink	8.262	-	1.430	0.08425	35040	0.696035588	12.1945	-	-	-	-
EU 41a Inks and Ink Additives	Lines 1-4	1304-K	Ink	6.897	0.363	1.430	0.08425		0.581112269	0.0000	0.0306	0.0000	0.1205	0.0000
EU 41a Inks and Ink Additives	Lines 1-4	MK-K01	Ink	6.030	1.064	1.430	0.08425	35040	0.50799043	8.9000	0.0896	1.5706	0.1205	2.1108
EU 41a Inks and Ink Additives	Lines 1-4	V401-D	Ink	6.168	0.502	1.430	0.08425		0.519675905	0.0000	0.0423	0.0000	0.1205	0.0000
EU 41b Make-Up Fluids	Lines 1-4	V701-D	Make-up Fluid	6.667	-	1.430	0.08425	35040	0.5617116	9.8412	-	-	-	-
EU 41c Solvents and Additives	Lines 1-4	S1018-6	Additive	6.727	-	-	0.00122		0.00820694	0.0000	-	-	-	-
EU 41c Solvents and Additives	Lines 1-4	V901-Q	Solvent	8.420	-	-	0.00122	35040	0.0102724	0.1800	-	-	-	-
EU 41c Solvents and Additives	Lines 1-4	MK-S04	Solvent	6.676	-	-	0.00122		0.00814472	0.0000	-	-	-	-
										31.1157			1.5706	2.1108

Note: VOC, Chromium, and PM content from MSDS

Hours based on 8,760*4 = 35,040 hours combined for lines 1-4

Calculations are based on the worst case scenario of running Lines 1-4 at the same time with the ink, make-up fluid, and solvent/additive with the highest pollutant content. Not all inks, make-up fluids, and solvents/additives can be run at the same time.

Sister Schubert's Horse Cave
PTE 2025 Heat Exchangers and Ovens
Permit # F-20-004 Renewal

AP 42, Chapter 1.4, Table 1.4-2												
PM10	PM2.5	Pmtotal	SO2	Nox	VOC	Methane	N2O	CO2	CO	Lead	Chromium	Toluene
lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf
5.7	1.9	7.6	0.6	100	5.5	2.3	2.2	120000	84	0.0005	0.0014	0.0034

Seven Natural Gas-Fired Indirect Heat Exchangers

Emissions Unit	Fuel Input MMscf/hr	PTE Hours/Year	PM Total lb/hr	PM10 tpy	PM2.5 lb/hr	PM2.5 tpy	SO2 lb/hr	SO2 tpy	Nox lb/hr	Nox tpy	VOC lb/hr	VOC tpy	Methane lb/hr	Methane tpy	N2O lb/hr	N2O tpy	CO2 lb/hr	CO2 tpy	CO lb/hr	CO tpy	Lead lb/hr	Lead tpy	Chromium lb/hr	Chromium tpy	Toluene lb/hr	Toluene tpy		
19	0.00245098	8,760	0.019	0.082	0.014	0.061	0.005	0.020	0.001	0.006	0.245	1.074	0.013	0.059	0.006	0.025	0.005	0.024	294.118	1288.235	0.206	0.902	0.0000012	0.0000054	0.0000034	0.0000150	0.0000083	0.0000365
23	0.00245098	8,760	0.019	0.082	0.014	0.061	0.005	0.020	0.001	0.006	0.245	1.074	0.013	0.059	0.006	0.025	0.005	0.024	294.118	1288.235	0.206	0.902	0.0000012	0.0000054	0.0000034	0.0000150	0.0000083	0.0000365
34-35	0.004901961	8,760	0.037	0.163	0.028	0.122	0.009	0.041	0.003	0.013	0.490	2.147	0.027	0.118	0.011	0.049	0.011	0.047	588.235	2576.471	0.412	1.804	0.0000025	0.0000107	0.0000069	0.0000301	0.0000167	0.0000730
36	0.001176471	8,760	0.009	0.039	0.007	0.029	0.002	0.010	0.001	0.003	0.118	0.515	0.006	0.028	0.003	0.012	0.003	0.011	141.176	618.353	0.099	0.433	0.0000006	0.0000026	0.0000016	0.0000072	0.0000040	0.0000175
53-54	0.004313725	8,760	0.033	0.144	0.025	0.108	0.008	0.036	0.003	0.011	0.431	1.889	0.024	0.104	0.010	0.043	0.009	0.042	517.647	2267.294	0.362	1.587	0.0000022	0.0000094	0.0000060	0.0000265	0.0000147	0.0000642
				0.509		0.382		0.127		0.040		6.699		0.368		0.154		0.147		8038.588		5.627		0.0000335		0.0000938		0.0002278

Note:
1 MMCF = 1020 MMBtu and emissions factors from AP 42, Chapter 1.4, Table 1.4-2

Bread Baking Chamber Ovens, lines 1-4

Emissions Unit	Permitted Process Rate wet dough tons/hr	Permitted Process Rate baked bread tons/hr	PTE Hours/year	VOC Emissions Factor lb/ton of baked bread	VOC	
					lb/hr	tpy
EU16-18, Line 1	2.64	2.200	8,760	2.730	6.006	26.306
EU20-22, Line 2	2.36	1.967	8,760	2.730	5.369	23.516
EU30-33, Line 3	3.38	2.817	8,760	2.730	7.690	33.680
EU49-52, Line 4	3.37	2.808	8,760	2.730	7.667	33.580
						117.083

Note:
The bread baking process is associated with low particulate matter emissions and PM is considered negligible
Approximately 1.2lbs of wet dough equals 1lb of baked bread based on process information
Source for VOC emissions factor obtained from AP-42 Chapter 9.9.6 Bread Baking equation, see below.

9.9.6 Bread Baking

USEPA Recommendation for Estimating VOC Emissions from Bread Bakeries

The Emissions Inventory Branch recommends the equation given in "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) for estimating VOC emissions from yeast-raised bread baking point sources. The equation is:

VOC E.F. = 0.95Yi+0.195ti-0.51S-0.86ts+1.90

where

VOC E.F. = pounds VOC per ton of baked bread
Yi = initial baker's percent of yeast
ti = total yeast action time in hours
S = final (spike) baker's percent of yeast
ts = spiking time in hours

This equation will be incorporated into a future revision of AP-42 section 9.9.6. Full details on the derivation and use of the equation are contained in the ACT document cited above. Copies of the ACT document are available - as supplies permit - from the Library Services Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. It is also available for \$27.00 (stock number PB93-157618) from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, phone (800) 553-6847.

VOC E.F. = 2.73

Yi = 1 %
ti = 2 hours
S = 1 %
ts = 0 hours

Ap-42, Chapter 9.9.1, Table 9.9.1-1 factors for Grain Receiving Hopper Truck and Grain Handling		
PMtotal for Unloading		PMtotal for Handling/Mixing
lbs/ton		lbs/ton
Flour	0.035	0.061
Sugar silos emissions factors from Louisville Metro Air Pollution Control District, FEDOP O-1610-23-F, effective date 1.5.24*		
lbs/ton		lbs/ton
Sugar	0.025	0.072

*The owner or operator shall not allow PM emissions to exceed 12.8 lb/hr for each Sugar Silo [Regulation 6.09, section 3.2]

Silos Insignificant Activities

Emissions Units	Process Rate tph	Hours/Year	PM10 Emission Factor	PM2.5 Emission Factor lb/ton	PMtotal		PM10		PM2.5	
					lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
01 Flour Silos - Truck Unloading	24	2190	0.0078	0.0013	0.840	0.920	0.187	0.205	0.031	0.034
02 Flour Silos - Flour Handling and Mixing	4.5	2190	0.034	0.0058	0.275	0.301	0.153	0.168	0.026	0.029
03 Flour Silos - Truck Unloading	24	2190	0.0078	0.0013	0.840	0.920	0.187	0.205	0.031	0.034
04 Flour Silos - Flour Handling and Mixing	4.5	2190	0.034	0.0058	0.275	0.301	0.153	0.168	0.026	0.029
78 Flour Silos - Flour Handling and Mixing Line 4	4.5	4380	0.034	0.0058	0.275	0.601	0.153	0.335	0.026	0.057
79 Flour Silos - Truck Unloading	24	4380	0.0078	0.0013	0.840	1.840	0.187	0.410	0.031	0.068
80 Bagged Flour - Handling and Mixing	0.105	8760	0.034	0.0058	0.006	0.028	0.004	0.016	0.001	0.003
81 Sugar Silos - Truck Unloading (3 silos, 1 bin)	8	676	0.0063	0.0011	0.200	0.068	0.050	0.017	0.008	0.003
82 Sugar Silos - Sugar Handling and Mixing (3 silos, 1 bin)	0.75	4284	0.034	0.0058	0.054	0.116	0.026	0.055	0.004	0.009
					5.093		1.577		0.266	

Notes:
No controls assumed.
Hours based on 8,760 hours per year divided by four total silos or 8,760 total hours for bagged flour.
Sugar bins (silos) are used for handling in mixing within the plant about 357 hours per month. Receive an estimated four loads of sugar per week. It takes roughly 3.25 hours to unload a load

AP 42, Chapter 1.4, Table 1.4-2													
PM10	PM2.5	PmTotal	SO2	Nox	VOC	Methane	N2O	CO2	CO	Lead	Chromium	Toluene	
lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf
5.7	1.9	7.6	0.6	100	5.5	2.3	2.2	120000	84	0.0005	0.0014	0.0034	

		PM Total		PM10		PM2.5		SO2		Nox		VOC		Methane		N2O		CO2		CO		Lead		Chromium		Toluene			
Emissions Unit	Fuel Input MMBtu/hr	Fuel Input MMscf/hr	PTE Hours/yr	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy		
4	1.44	0.001411765	8760	0.011	0.047	0.008	0.035	0.003	0.012	0.001	0.004	0.141	0.618	0.008	0.034	0.003	0.014	0.003	0.014	169.412	742.024	0.119	0.519	7.059E-07	0.0000031	1.976E-06	0.0000087	0.0000048	0.0000210
5	0.04	3.92157E-05	8760	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.017	0.000	0.001	0.000	0.000	0.000	0.000	4.706	20.612	0.003	0.014	1.961E-08	0.0000001	5.49E-08	0.0000002	1.333E-07	0.0000006
6	0.262	0.000266863	8760	0.002	0.009	0.001	0.006	0.000	0.002	0.000	0.001	0.026	0.113	0.001	0.006	0.001	0.003	0.001	0.002	30.824	135.007	0.022	0.095	1.284E-07	0.0000006	3.596E-07	0.0000016	8.733E-07	0.0000038
7	0.275	0.000269608	8760	0.002	0.009	0.002	0.007	0.001	0.002	0.000	0.001	0.027	0.118	0.001	0.006	0.001	0.003	0.001	0.003	32.353	141.706	0.023	0.099	1.348E-07	0.0000006	3.775E-07	0.0000017	9.167E-07	0.0000040
8	0.250	0.000252941	8760	0.002	0.008	0.001	0.006	0.000	0.002	0.000	0.001	0.025	0.111	0.001	0.006	0.001	0.003	0.001	0.002	30.353	132.946	0.021	0.093	1.295E-07	0.0000006	3.541E-07	0.0000016	8.6E-07	0.0000038
9	3.189	0.003126471	8760	0.024	0.104	0.018	0.078	0.006	0.026	0.002	0.008	0.313	1.369	0.017	0.075	0.007	0.031	0.007	0.030	375.176	1643.273	0.263	1.150	1.563E-06	0.0000068	4.377E-06	0.0000192	1.063E-05	0.0000466
10	3.189	0.003126471	8760	0.024	0.104	0.018	0.078	0.006	0.026	0.002	0.008	0.313	1.369	0.017	0.075	0.007	0.031	0.007	0.030	375.176	1643.273	0.263	1.150	1.563E-06	0.0000068	4.377E-06	0.0000192	1.063E-05	0.0000466
11	0.124	0.000121569	8760	0.001	0.004	0.001	0.003	0.000	0.001	0.000	0.000	0.012	0.053	0.001	0.003	0.000	0.001	0.000	0.001	14.588	63.896	0.010	0.045	6.078E-08	0.0000003	1.702E-07	0.0000007	4.133E-07	0.0000019
12-13	0.4	0.000392157	17520	0.003	0.026	0.002	0.020	0.001	0.007	0.000	0.002	0.039	0.344	0.002	0.019	0.001	0.008	0.001	0.008	47.059	412.235	0.033	0.289	1.961E-07	0.0000017	5.49E-07	0.0000048	1.333E-06	0.0000117
14-15	0.6	0.000588235	17520	0.004	0.039	0.003	0.029	0.001	0.010	0.000	0.003	0.059	0.515	0.003	0.028	0.001	0.012	0.001	0.011	70.588	618.353	0.049	0.433	2.941E-07	0.0000026	8.235E-07	0.0000072	0.0000022	0.0000175
24-25	1.98	0.001941176	17520	0.015	0.129	0.011	0.097	0.004	0.032	0.001	0.010	0.194	1.700	0.011	0.094	0.004	0.039	0.004	0.037	232.941	2040.565	0.163	1.428	9.705E-07	0.0000085	2.718E-06	0.0000238	0.0000066	0.0000578
26	0.4	0.000392157	8760	0.003	0.013	0.002	0.010	0.001	0.003	0.000	0.001	0.039	0.172	0.002	0.009	0.001	0.004	0.001	0.004	47.059	206.118	0.033	0.144	1.961E-07	0.0000009	5.49E-07	0.0000024	1.333E-06	0.0000058
27	0.4	0.000392157	8760	0.003	0.013	0.002	0.010	0.001	0.003	0.000	0.001	0.039	0.172	0.002	0.009	0.001	0.004	0.001	0.004	47.059	206.118	0.033	0.144	1.961E-07	0.0000009	5.49E-07	0.0000024	1.333E-06	0.0000058
37	0.04	3.92157E-05	8760	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.017	0.000	0.001	0.000	0.000	0.000	0.000	4.706	20.612	0.003	0.014	1.961E-08	0.0000001	5.49E-08	0.0000002	1.333E-07	0.0000006
38	0.325	0.000318627	8760	0.002	0.011	0.002	0.008	0.001	0.003	0.000	0.001	0.032	0.140	0.002	0.008	0.001	0.003	0.001	0.003	38.235	167.471	0.027	0.117	1.593E-07	0.0000007	4.461E-07	0.0000020	1.083E-06	0.0000047
39	5.4	0.005294118	8760	0.040	0.176	0.030	0.132	0.010	0.044	0.003	0.014	0.529	2.319	0.029	0.128	0.012	0.053	0.012	0.051	635.294	2782.588	0.445	3.948	2.647E-06	0.0000116	7.412E-06	0.0000325	0.000018	0.0000788
40	0.15	0.000147059	8760	0.001	0.005	0.001	0.004	0.000	0.001	0.000	0.000	0.015	0.064	0.001	0.004	0.000	0.001	0.000	0.001	17.647	77.294	0.012	0.054	7.353E-08	0.0000003	2.059E-07	0.0000009	0.0000005	0.0000022
42	0.913	0.000895098	8760	0.007	0.030	0.005	0.022	0.002	0.007	0.001	0.002	0.090	0.392	0.005	0.022	0.002	0.009	0.002	0.009	107.412	470.464	0.075	0.329	4.475E-07	0.0000020	1.253E-06	0.0000055	3.043E-06	0.0000133
43-44	1.97	0.001931373	17520	0.015	0.129	0.011	0.096	0.004	0.032	0.001	0.010	0.193	1.692	0.011	0.093	0.004	0.039	0.004	0.037	231.765	2030.259	0.162	1.421	9.657E-07	0.0000085	2.704E-06	0.0000237	6.567E-06	0.0000575
47	0.15	0.000147059	8760	0.001	0.005	0.001	0.004	0.000	0.001	0.000	0.000	0.015	0.064	0.001	0.004	0.000	0.001	0.000	0.001	17.647	77.294	0.012	0.054	7.353E-08	0.0000003	2.059E-07	0.0000009	0.0000005	0.0000022
55-56	0.6	0.000588235	17520	0.004	0.039	0.003	0.029	0.001	0.010	0.000	0.003	0.059	0.515	0.003	0.028	0.001	0.012	0.001	0.011	70.588	618.353	0.049	0.433	2.941E-07	0.0000026	8.235E-07	0.0000072	0.0000022	0.0000175
57	1.588	0.001556863	8760	0.012	0.052	0.009	0.039	0.003	0.013	0.001	0.004	0.156	0.682	0.009	0.038	0.004	0.016	0.003	0.015	186.824	818.287	0.131	0.573	7.784E-07	0.0000034	2.18E-06	0.0000095	5.293E-06	0.0000232
58-61	0.72	0.000705982	35040	0.005	0.094	0.004	0.070	0.001	0.023	0.000	0.007	0.071	1.237	0.004	0.068	0.002	0.028	0.002	0.027	84.705	1484.047	0.059	1.039	3.529E-07	0.0000062	9.882E-07	0.0000173	0.0000024	0.0000420
62-63	1.98	0.001941176	17520	0.015	0.129	0.011	0.097	0.004	0.032	0.001	0.010	0.194	1.700	0.011	0.094	0.004	0.039	0.004	0.037	232.941	2040.565	0.163	1.428	9.705E-07	0.0000085	2.718E-06	0.0000238	0.0000066	0.0000578
65	0.04	3.92157E-05	8760	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.017	0.000	0.001	0.000	0.000	0.000	0.000	4.706	20.612	0.003	0.014	1.961E-08	0.0000001	5.49E-08	0.0000002	1.333E-07	0.0000006
67	0.04	3.92157E-05	8760	0.000	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.004	0.017	0.000	0.001	0.000	0.000	0.000	0.000	4.706	20.612	0.003	0.014	1.961E-08	0.0000001	5.49E-08	0.0000002	1.333E-07	0.0000006
68	0.18	0.000176471	8760	0.001	0.006	0.001	0.004	0.000	0.001	0.000	0.000	0.018	0.077	0.001	0.004	0.000	0.002	0.000	0.002	21.176	92.753	0.015	0.065	8.824E-08	0.0000004	2.471E-07	0.0000011	0.0000006	0.0000026
69-72	0.72	0.000705982	35040	0.005	0.094	0.004	0.070	0.001	0.023	0.000	0.007	0.071	1.237	0.004	0.068	0.002	0.028	0.002	0.027	84.705	1484.047	0.059	1.039	3.529E-07	0.0000062	9.882E-07	0.0000173	0.0000024	0.0000420
73	0.067	6.56863E-05	8760	0.000	0.002	0.000	0.002	0.000	0.001	0.000	0.000	0.007	0.029	0.000	0.002	0.000	0.001	0.000	0.001	7.882	34.525	0.006	0.024	3.284E-08	0.0000001	9.196E-08	0.0000004	2.233E-07	0.0000010
74	0.15	0.000147059	8760	0.001	0.005	0.001	0.004	0.000	0.001	0.000	0.000	0.015	0.064	0.001	0.004	0.000	0.001	0.000	0.001	17.647	77.294	0.012	0.054	7.353E-08	0.0000003	2.059E-07	0.0000009	0.0000005	0.0000022
75	5.494	0.005396275	8760	0.041	0.179	0.031	0.134	0.010	0.045	0.003	0.014	0.539	2.359	0.030	0.130	0.012	0.054	0.012	0.052	646.353	2831.026	0.452	3.982	2.693E-06	0.0000118	7.541E-06	0.0000330	1.831E-05	0.0000802
76	0.238	0.000233333	8760	0.002	0.008	0.001	0.006	0.000	0.002	0.000	0.001	0.023	0.102	0.001	0.006	0.001	0.002	0.001	0.002	28.000	122.640	0.020	0.086	1.187E-07	0.0000005	3.267E-07	0.0000014	7.933E-07	0.0000035
77	0.3	0.000294118	8760	0.002	0.010	0.002	0.007	0.001	0.002	0.000	0.001	0.029	0.129	0.002	0.007	0.001	0.003	0.001	0.003	35.294	154.588	0.025	0.108	1.471E-07	0.0000006	4.118E-07	0.0000018	0.000001	0.0000444
				1.484		1.113		6.371		0.117		19.526		1.074		0.449		0.430		23431.454		16.402		0.0000976		0.0002734		0.0006639	

2025 Permit Renewal - Actual Emissions Summary

	Actual Emissions tpy											HAPs tpy	
	PM2.5	PM10	SO2	NOx	CO	VOC	Lead	PM total	CO2	Methane	Nitrous Oxide (N2O)	Chromium	Toluene
Seven Natural Gas-Fired Indirect Heat Exchangers	0.062	0.185	0.019	3.246	2.727	0.179	0.00002	0.247	3895.253	0.075	0.071	0.000045	0.00011
Break Baking Chamber Ovens, Lines 1-4	-	-	-	-	-	42.715	-	-	-	-	-	-	-
Ink Jet Stencil Lines	0.021	0.021	-	-	-	0.307	-	0.021	-	-	-	0.0042	-
Three Diesel-Fired Emergency Generators	0.015	0.015	0.014	0.210	0.045	0.017	-	0.015	0.015	-	-	-	-
Insignificant Activities Silos	0.125	0.735	-	-	-	-	-	1.527	-	-	-	-	-
Insignificant Activities Heaters	0.315	0.315	0.033	5.532	4.647	0.304	0.00003	0.420	6638.985	0.127	0.122	0.0001	0.0002
Totals tpy	0.538	1.271	0.066	8.988	7.419	43.522	0.000044	2.231	10534.253	0.202	0.193	0.0043	0.00030

Sister Schubert's Horse Cave
Actuals 2024 Emergency Diesel Generators
Permit # F-20-004 Renewal

AP-42, Chapter 3.3, Table 3.3-1 and 3.3-2 Emission Factors							
PM10	PM2.5	Pmtotal	SO2	Nox	VOC	CO2	CO
lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal	lb/Mgal
42.47	42.47	42.47	39.73	604.17	47.95	42.47	130.15

Three Diesel-Fired Emergency Generators

Emissions Unit	Power Output hp	2024 Hours/Year	Fuel Input Mgal/hr	PM10 Emissions lbs/hr	PM10 Emissions tpy	PM2.5 Emissions lbs/hr	PM2.5 Emissions tpy	PMtotal Emissions lbs/hr	PMtotal Emissions tpy	SO2 Emissions lbs/hr	SO2 Emissions tpy	NOX Emissions lbs/hr	NOX Emissions tpy	VOC Emissions lbs/hr	VOC Emissions tpy	CO2 Emissions lbs/hr	CO2 Emissions tpy	CO Emissions lbs/hr	CO Emissions tpy
45	364	25	0.0097	0.412	0.005	0.412	0.005	0.412	0.005	0.385	0.005	5.860	0.074	0.465	0.006	0.412	0.005	1.262	0.016
46	364	28	0.0164	0.697	0.010	0.697	0.010	0.697	0.010	0.652	0.009	9.908	0.136	0.786	0.011	0.697	0.010	2.134	0.029
					0.015		0.015		0.015		0.014		0.210		0.017		0.015		0.045

Notes:
Emission Factors from Ap 42, Chapter 3.3, Table 3.3-1 and 3.3-2, converted to lb/Mgal using 137,000 btu/gal
VOC factor chosen from AP-42, Table 3.3-1, TOC Exhaust

Emission s Unit	Used on:	Facility Name	Description	VOC content lb/gal	Chromium content lb/gal	PM/PM10/P M2.5 content lb/gal	Actual Usage gal/hr	Actual hours/yr	VOC Emissions lb/hr	VOC Emissions tpy	Chromium Emissions lb/hr	Chromium Emissions tpy	PM/PM10/P M2.5 Emissions lb/hr	PM/PM10/PM2.5 Emissions tpy
EU 41a In	Lines 1-4	4500 Standard Cart	Ink	8.262	-	1.430	0.000095	18000	0.00078372	0.0071	-	-	0.0001	0.0012
EU 41a In	Lines 1-4	1304-K	Ink	6.897	0.363	1.430	0.000190667	18000	0.00131512	0.0118	0.0001	0.0006	0.0003	0.0025
EU 41a In	Lines 1-4	MK-K01	Ink	6.030	1.064	1.430	0.0002816	18000	0.00169792	0.0153	0.0003	0.0027	0.0004	0.0036
EU 41a In	Lines 1-4	V401-D	Ink	6.168	0.502	1.430	0.000198	18000	0.00122132	0.0110	0.0001	0.0009	0.0003	0.0025
EU 41b M	Lines 1-4	V701-D	Make-up Fluid	6.667	-	1.430	0.000891	18000	0.00594048	0.0535	-	-	0.0013	0.0115
EU 41c Sd	Lines 1-4	S1018-6	Additive	6.727	-	-	0.0008096	18000	0.00544618	0.0490	-	-	-	-
EU 41c Sd	Lines 1-4	V901-Q	Solvent	8.420	-	-	0.000117333	18000	0.00098795	0.0089	-	-	-	-
EU 41c Sd	Lines 1-4	MK-S04	Solvent	6.676	-	-	0.002510933	18000	0.01676299	0.1509	-	-	-	-
												0.3074	0.0042	0.0213

Note: VOC, Chromium, and PM content from MSDS
Hours based on 18,000 combined line 1-4 hours run in 2024

AP 42, Chapter 1.4, Table 1.4-2													
PM10	PM2.5	Pmtotal	SO2	Nox	VOC	Methane	N2O	CO2	CO	Lead	Chromium	Toluene	
lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf
5.7		1.9	7.6	0.6	100	5.5	2.3	2.2	120000	84	0.0005	0.0014	0.0034

Seven Natural Gas-Fired Indirect Heat Exchangers

Emissions Unit	Fuel Input MMscf/hr	Actual 2024 Hours/Year	PM Total		PM10		PM2.5		SO2		Nox		VOC		Methane		N2O		CO2		CO		Lead		Chromium		Toluene	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
19	0.00245098	3,141	0.019	0.029	0.014	0.022	0.005	0.007	0.001	0.002	0.245	0.385	0.013	0.021	0.006	0.009	0.005	0.008	294.118	461.912	0.206	0.323	0.0000012	0.0000019	0.0000034	0.0000054	0.0000083	0.0000131
23	0.00245098	3,034	0.019	0.028	0.014	0.021	0.005	0.007	0.001	0.002	0.245	0.372	0.013	0.020	0.006	0.009	0.005	0.008	294.118	446.176	0.206	0.312	0.0000012	0.0000019	0.0000034	0.0000052	0.0000083	0.0000126
34-35	0.004901961	4,831	0.037	0.090	0.028	0.067	0.009	0.022	0.003	0.007	0.490	1.184	0.027	0.065	0.011	0.027	0.011	0.026	588.235	1420.882	0.412	0.995	0.0000025	0.0000059	0.0000069	0.0000166	0.0000167	0.0000403
36	0.001176471	4,831	0.009	0.022	0.007	0.016	0.002	0.005	0.001	0.002	0.118	0.284	0.006	0.016	0.003	0.007	0.003	0.006	141.176	341.012	0.099	0.239	0.0000006	0.0000014	0.0000016	0.0000040	0.0000040	0.0000097
53-54	0.004313725	4,734	0.033	0.078	0.025	0.058	0.008	0.019	0.003	0.006	0.431	1.021	0.024	0.056	0.010	0.023	0.009	0.022	517.647	1225.271	0.362	0.858	0.0000022	0.0000051	0.0000060	0.0000143	0.0000147	0.0000347
			0.247		0.185		0.062		0.019		3.246		0.179		0.075		0.071		3895.253		2.727		0.0000162		0.0000454		0.0001104	

Note:
1 MMCF = 1020 MMBtu and emissions factors from AP 42, Chapter 1.4, Table 1.4-2

Bread Baking Chamber Ovens, lines 1-4

Emissions Unit	Permitted Process Rate tons/hr	Actual lbs of wet dough baked in 2024	Actual lbs of bread baked in 2024	Actual Tons of baked bread processed in 2024	2024 Processing hours/year	VOC Emissions Factor lb/ton of baked bread	VOC	
							lb/hr	tpy
EU16-18, Line 1	2.64	11219626	9349688.33	4674.84	3,644	2.730	3.50228	6.381
EU20-22, Line 2	2.36	12473917	10394930.83	5197.47	3,494	2.730	4.06098	7.095
EU30-33, Line 3	3.38	26536764	22113970.00	11056.99	5,584	2.730	5.40573	15.093
EU49-52, Line 4	3.37	24873810	20728175.00	10364.09	5,242	2.730	5.39755	14.147
								42.715

Note:
The bread baking process is associated with low particulate matter emissions and PM is considered negligible
Approximately 1.2lbs of wet dough equals 1lb of baked bread based on process information
Source for VOC emissions factor obtained from AP-42 Chapter 9.9.6 Bread Baking equation, see below.

9.9.6 Bread Baking

USEPA Recommendation for Estimating VOC Emissions from Bread Bakeries

The Emissions Inventory Branch recommends the equation given in "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992) for estimating VOC emissions from yeast-raised bread baking point sources. The equation is:

VOC E.F. = 0.95Yi+0.195ti-0.51S-0.86ts+1.90

where

VOC E.F. = pounds VOC per ton of baked bread
Yi = initial baker's percent of yeast
ti = total yeast action time in hours
S = final (spike) baker's percent of yeast
ts = spiking time in hours

This equation will be incorporated into a future revision of AP-42 section 9.9.6. Full details on the derivation and use of the equation are contained in the ACT document cited above. Copies of the ACT document are available - as supplies permit - from the Library Services Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. It is also available for \$27.00 (stock number PB93-157618) from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, phone (800) 553-6847.

VOC E.F. = 2.73

Yi = 1 %
ti = 2 hours
S = 1 %
ts = 0 hours

Ap-42, Chapter 9.9.1, Table 9.9.1-1 factors for Grain Receiving Hopper Truck and Grain Handling		
PMtotal for Unloading		PMtotal for Handling/Mixing
lbs/ton		lbs/ton
Flour	0.035	0.061
Sugar silos emissions factors from Louisville Metro Air Pollution Control District, FEDOP O-1610-23-F, effective date 1.5.24*		
lbs/ton		lbs/ton
Sugar	0.025	0.072

*The owner or operator shall not allow PM emissions to exceed 12.8 lb/hr for each Sugar Silo [Regulation 6.09, section 3.2]

Flour Silos Insignificant Activities

Emissions Unit	Process Rate tph	Hours/Year	PM10 Emission Factor lb/ton	PM2.5 Emission Factor lb/ton	PMtotal		PM10		PM2.5	
					lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
01 Flour Silos - Truck Unloading	24	153	0.0078	0.0013	0.84	0.06426	0.1872	0.014321	0.0312	0.002387
02 Flour Silos - Flour Handling and Mixing	4.5	1935	0.034	0.0058	0.2745	0.2655788	0.153	0.148028	0.0261	0.025252
03 Flour Silos - Truck Unloading	24	153	0.0078	0.0013	0.84	0.06426	0.1872	0.014321	0.0312	0.002387
04 Flour Silos - Flour Handling and Mixing	4.5	1935	0.034	0.0058	0.2745	0.2655788	0.153	0.148028	0.0261	0.025252
78 Flour Silos - Flour Handling and Mixing Line 4	4.5	3870	0.034	0.0058	0.2745	0.5311575	0.153	0.296055	0.0261	0.050504
79 Flour Silos - Truck Unloading	24	306	0.0078	0.0013	0.84	0.12852	0.1872	0.028642	0.0312	0.004774
80 Bagged Flour - Handling and Mixing	0.105	7740	0.034	0.0058	0.0064	0.0247	0.0036	0.0138	0.0006	0.0023
81 Sugar Silos - Truck Unloading (3 silos, 1 bin)	8	676	0.0063	0.0011	0.200	0.068	0.050	0.017	0.008	0.003
82 Sugar Silos - Sugar Handling and Mixing (3 silos, 1 bin)	0.75	4284	0.034	0.0058	0.054	0.116	0.026	0.055	0.004	0.009
					1.5273		0.7348		0.1251	

Notes:
No controls assumed.
Hours based on 645 projected hours per month of all combined silo handling/mixing usage and 51 hours per month of all combined silo truck unloading usage. There is one silo per emission unit except for EU 78/79 which is comprised of two silos.
Hours for bagged flour based on 645 project hours per month of handling/mixing operations.
Sugar bins (silos) are used for handling in mixing within the plant about 357 hours per month. Receive an estimated four loads of sugar per week. It takes roughly 3.25 hours to unload a load.

AP 42, Chapter 1.4, Table 1.4-2																	
PM10	PM2.5	PmTotal	SO2	Nox	VOC	Methane	N2O	CO2	CO	Lead	Chromium	Toluene					
lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf	lb/MMscf					
5.7	1.9	7.6	0.6	100	5.5	2.3	2.2	120000	84	0.0005	0.0014	0.0034					

Emissions Unit	Fuel Input MMBtu/hr	Fuel Input MMscf/hr	2024 Hours/yr	PM Total		PM10		PM2.5		SO2		Nox		VOC		Methane		N2O		CO2		CO		Lead		Chromium		Toluene	
				lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
				0.01073	0.01107	0.00805	0.00830	0.00268	0.00277	0.00085	0.00087	0.14118	0.14569	0.00776	0.00801	0.00325	0.00335	0.00311	0.00321	169.41176	174.83294	0.11859	0.12238	0.000001	0.000001	0.00000	0.00000	0.00000	0.00000
4	1.44	0.001411765	2,064	0.00030	0.00031	0.00022	0.00023	0.00007	0.00007	0.00002	0.00002	0.00392	0.00405	0.00022	0.00022	0.00009	0.00009	0.00009	0.00009	4.70588	4.85647	0.00329	0.00340	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
5	0.04	0.000256963	2,064	0.00195	0.00201	0.00146	0.00151	0.00049	0.00050	0.00015	0.00016	0.02569	0.02651	0.00141	0.00146	0.00059	0.00061	0.00057	0.00058	30.82353	31.80988	0.02158	0.02227	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
6	0.262	0.000269608	2,064	0.00205	0.00211	0.00154	0.00159	0.00051	0.00053	0.00016	0.00017	0.02696	0.02782	0.00148	0.00153	0.00062	0.00064	0.00059	0.00061	32.35294	33.38824	0.02265	0.02337	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
7	0.275	0.000252941	2,064	0.00192	0.00198	0.00144	0.00149	0.00048	0.00050	0.00015	0.00016	0.02529	0.02610	0.00139	0.00144	0.00058	0.00060	0.00056	0.00057	30.35294	31.32424	0.02125	0.02193	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
8	0.258	0.0003126471	2,064	0.002376	0.02452	0.01782	0.01839	0.00594	0.00613	0.00188	0.00194	0.31265	0.32265	0.01720	0.01775	0.00719	0.00742	0.00688	0.00710	375.17647	387.18212	0.26262	0.27103	0.000002	0.000002	0.00000	0.00000	0.00001	0.00001
9	3.189	0.003126471	2,064	0.02376	0.02452	0.01782	0.01839	0.00594	0.00613	0.00188	0.00194	0.31265	0.32265	0.01720	0.01775	0.00719	0.00742	0.00688	0.00710	375.17647	387.18212	0.26262	0.27103	0.000002	0.000002	0.00000	0.00000	0.00001	0.00001
10	0.124	0.000121569	2,064	0.00092	0.00095	0.00069	0.00072	0.00023	0.00024	0.00007	0.00008	0.01216	0.01255	0.00067	0.00069	0.00028	0.00029	0.00027	0.00028	14.58824	15.05506	0.01021	0.01054	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
12	0.4	0.000392157	3,089	0.00298	0.00460	0.00224	0.00345	0.00075	0.00115	0.00024	0.00036	0.03922	0.06057	0.00216	0.00333	0.00090	0.00139	0.00086	0.00133	47.05882	72.68235	0.03294	0.05088	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
14-15	0.6	0.000588235	3,036	0.00447	0.00679	0.00335	0.00509	0.00112	0.00170	0.00035	0.00054	0.05882	0.08929	0.00324	0.00491	0.00135	0.00205	0.00129	0.00196	70.58824	107.15294	0.04941	0.07501	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
24-25	1.98	0.001941176	9,041	0.01475	0.06669	0.01106	0.05002	0.00369	0.01067	0.00116	0.00527	0.19412	0.57751	0.01068	0.04826	0.00446	0.02018	0.00427	0.01931	232.94118	1053.01059	0.16306	0.37511	0.000001	0.000004	0.00000	0.00001	0.00001	0.00003
26	0.4	0.000392157	2,064	0.00298	0.00308	0.00224	0.00231	0.00075	0.00077	0.00024	0.00024	0.03922	0.04047	0.00216	0.00223	0.00090	0.00093	0.00086	0.00089	47.05882	48.56471	0.03294	0.03400	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
27	0.4	0.000392157	2,064	0.00298	0.00308	0.00224	0.00231	0.00075	0.00077	0.00024	0.00024	0.03922	0.04047	0.00216	0.00223	0.00090	0.00093	0.00086	0.00089	47.05882	48.56471	0.03294	0.03400	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
37	0.04	3.92157E-05	2,075	0.00030	0.00031	0.00022	0.00023	0.00007	0.00007	0.00002	0.00002	0.00392	0.00407	0.00022	0.00022	0.00009	0.00009	0.00009	0.00009	4.70588	4.88235	0.00329	0.00342	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
38	0.325	0.000310627	2,064	0.00242	0.00250	0.00182	0.00187	0.00061	0.00062	0.00019	0.00020	0.03186	0.03288	0.00175	0.00181	0.00073	0.00076	0.00070	0.00072	38.23529	39.45882	0.02676	0.02762	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
39	5.4	0.005294118	2,064	0.04024	0.04152	0.03018	0.03114	0.01006	0.01038	0.00318	0.00328	0.52941	0.54635	0.02912	0.03005	0.01218	0.01257	0.01165	0.01202	635.29412	655.62353	0.44471	0.45894	0.000003	0.000003	0.00001	0.00001	0.00002	0.00002
40	0.15	0.000147059	2,064	0.00112	0.00115	0.00084	0.00087	0.00028	0.00029	0.00009	0.00009	0.01471	0.01518	0.00081	0.00083	0.00034	0.00035	0.00032	0.00033	17.64706	18.21176	0.01235	0.01275	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
42	0.913	0.000895098	2,064	0.00680	0.00702	0.00510	0.00527	0.00170	0.00176	0.00054	0.00055	0.08951	0.09237	0.00492	0.00508	0.00206	0.00212	0.00197	0.00203	107.41176	110.84894	0.07519	0.07759	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
43-44	1.97	0.001931373	9,041	0.01468	0.06635	0.01101	0.04977	0.00367	0.01059	0.00116	0.00524	0.19314	0.57388	0.01062	0.04802	0.00444	0.02008	0.00425	0.01921	231.76471	1047.69235	0.16224	0.37338	0.000001	0.000004	0.00000	0.00001	0.00001	0.00003
47	0.15	0.000147059	2,064	0.00112	0.00115	0.00084	0.00087	0.00028	0.00029	0.00009	0.00009	0.01471	0.01518	0.00081	0.00083	0.00034	0.00035	0.00032	0.00033	17.64706	18.21176	0.01235	0.01275	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
55-56	0.6	0.000588235	4,734	0.00447	0.01058	0.00335	0.00794	0.00112	0.00265	0.00035	0.00064	0.05882	0.13924	0.00324	0.00766	0.00135	0.00320	0.00129	0.00306	70.58824	167.08235	0.04941	0.11696	0.000000	0.000001	0.00000	0.00000	0.00000	0.00000
57	1.588	0.001556863	2,028	0.01183	0.01200	0.00887	0.00900	0.00296	0.00300	0.00093	0.00095	0.15569	0.15787	0.00856	0.00868	0.00358	0.00363	0.00343	0.00347	186.82353	189.43906	0.13078	0.13261	0.000001	0.000001	0.00000	0.00000	0.00001	0.00001
58-61	0.72	0.000705882	2,064	0.00596	0.00538	0.00402	0.00403	0.00134	0.00134	0.00042	0.00042	0.07059	0.07073	0.00388	0.00389	0.00162	0.00163	0.00155	0.00156	84.70588	84.97529	0.05929	0.05941	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
62-63	1.98	0.001941176	8,838	0.01475	0.06519	0.01106	0.04899	0.00369	0.01030	0.00116	0.00515	0.19412	0.57511	0.01068	0.04718	0.00446	0.01973	0.00427	0.01987	232.94118	1029.36706	0.16306	0.37256	0.000001	0.000004	0.00000	0.00001	0.00001	0.00003
66	0.04	3.92157E-05	2,064	0.00030	0.00031	0.00022	0.00023	0.00007	0.00008	0.00002	0.00002	0.00392	0.00405	0.00022	0.00022	0.00009	0.00009	0.00009	0.00009	4.70588	4.85647	0.00329	0.00340	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
67	0.04	3.92157E-05	2,064	0.00030	0.00031	0.00022	0.00023	0.00007	0.00008	0.00002	0.00002	0.00392	0.00405	0.00022	0.00022	0.00009	0.00009	0.00009	0.00009	4.70588	4.85647	0.00329	0.00340	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
68	0.18	0.000176471	2,064	0.00134	0.00138	0.00101	0.00104	0.00034	0.00035	0.00011	0.00011	0.01765	0.01821	0.00097	0.00100	0.00041	0.00042	0.00039	0.00040	21.17647	21.85412	0.01482	0.01530	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
69-72	0.72	0.000705882	2,064	0.00596	0.00554	0.00402	0.00415	0.00134	0.00138	0.00042	0.00044	0.07059	0.07285	0.00388	0.00401	0.00162	0.00168	0.00155	0.00160	84.70588	87.41647	0.05929	0.06119	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
73	0.067	6.56863E-05	2,064	0.00050	0.00052	0.00037	0.00039	0.00012	0.00013	0.00004	0.00004	0.00657	0.00678	0.00036	0.00037	0.00015	0.00016	0.00014	0.00015	7.88235	8.13459	0.00552	0.00569	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
74	0.15	0.000147059	2,064	0.00112	0.00115	0.00084	0.00087	0.00028	0.00029	0.00009	0.00009	0.01471	0.01518	0.00081	0.00083	0.00034	0.00035	0.00032	0.00033	17.64706	18.21176	0.01235	0.01275	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
75	5.494	0.005386275	2,064	0.04094	0.04225	0.03070	0.03168	0.01023	0.01096	0.00323	0.00334	0.53863	0.55986	0.02962	0.03067	0.01239	0.01278	0.01185	0.01223	646.39494	667.03624	0.45245	0.46793	0.000003	0.000003	0.00001	0.00001	0.00002	0.00002
76	0.28	0.000294118	2,064	0.00117	0.00121	0.00084	0.00087	0.00028	0.00029	0.00009	0.00009	0.01471	0.01518	0.00081	0.00083	0.00034	0.00035	0.00032	0.00033	17.64706	18.21176	0.01235	0.01275	0.000000	0.000000	0.00000	0.00000	0.00000	0.00000
77	0.3	0.000294118	2,064	0.00117	0.00121	0.00084	0.00087	0.00028	0.00029	0.00009	0.00009	0.01471	0.01518	0.00081	0.00083	0.00034	0.00035	0.00032	0.00033	17.64706	18.21176	0.01235	0.01275	0.000000	0.000000	0.00000	0.00000	0.00000	0.