AIR POLLUTION CONDITIONAL MAJOR PERMIT RENEWAL APPLICATION

(Current Operating Air Quality Permit F-17-017)
Issuance Date: November 30, 2019
Expiration Date: November 30, 2024

(September 2024)

Prepared for:

KENLAKE FOODS
300 North L.P. Miller Street
Murray, KY 42071

Prepared by:

HIXSON
ARCHITECTURE ENGINEERING INTERIORS

659 Van Meter Street
Cincinnati, Ohio 45202
(513) 241-1230

300 North L. P. Miller Street, Murray, Kentucky 42071, 270-762-5100

September 6, 2024

Permit Review Branch
Division for Air Quality
200 Fair Oaks Lane, 1st Floor
Frankfort, KY 40601

Subject: Air Pollution Conditional Major Permit Renewal Application for Kenlake Foods, Murray, Kentucky
Permit# F-19-017

Dear Permit Reviewer:

Please find our Air Pollution Permit Renewal Application, uploaded for submittal at the Kentucky One Stop Business Portal. Kenlake Foods, located in Murray, Kentucky, currently operates under Operating Air Quality Permit # F-19-017, expiring on November 30, 2024.

The facility is a currently permitted as a minor source with total potential to emit of each criteria pollutant less than 100 tons/year and HAPS less than 10 ton/year each and less than 25 tons/year combined.

The emission unit Oat Room Vacuum (EU09) has been removed from the facility. This unit has been removed from all applications, provided maps, and removed from the facility PTE calculations.

Should you have any questions concerning the application, please feel free to contact Kenlake's Plant Engineer, Ken Holdener at (270) 762-5100 or our Environmental Consultant, Gabrielle Fadul of Hixson at (513) 241-1230.

Sincerely,

Justin Menees
Site Leader

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: **Kenlake Foods**

KY EIS (AFS) #: **21- 035-00031**

Permit #: **F-19-017**

Agency Interest (AI) ID: **509**

Date: **9/6/2024**

Section AI.1: Source Information

Physical Location Address:	**Street:**	300 North L.P. Miller Street					
	City:	Murray	**County:**	Calloway	**Zip Code:**	42071	
Mailing Address:	**Street or P.O. Box:**	300 North L.P. Miller Street					
	City:	Murray	**State:**	Kentucky	**Zip Code:**	42071	

Standard Coordinates for Source Physical Location

Longitude: 88.298044 (decimal degrees) **Latitude:** 36.613536 (decimal degrees)

Primary (NAICS) Category: Roasted Nuts and Peanut Butter Manufacturing **Primary NAICS #:** 311911

Classification (SIC) Category: Salted and Roasted Nuts and Seeds **Primary SIC #:** 2068

Briefly discuss the type of business conducted at this site: Facility roasts and packages nuts, packaged oats, and formulate/package powdered food products.

Description of Area Surrounding Source: ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☐ Urban Area ☑ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: 360

Approximate distance to nearest residence or commercial property: *20 Feet*

Property Area: **6.8 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: Kenlake Foods

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 300 North L.P. Miller Street

City: Murray **State:** Kentucky **Zip Code:** 42071

Email: (if individual)

Phone: (270) 762-5100

Technical Contact

Name: Kenneth Holdener

Title: Senior Engineering Leader

Mailing Address: **Street or P.O. Box:** 300 North L.P. Miller Street

City: Murray **State:** Kentucky **Zip Code:** 42071

Email: ken.holdener@kroger.com

Phone: 270-762-5125

Air Permit Contact for Source

Name: Kenneth Holdener

Title:

Mailing Address: **Street or P.O. Box:** 300 North L.P. Miller Street

City: Murray **State:** Kentucky **Zip Code:** 42071

Email: ken.holdener@kroger.com

Phone: 270-762-5125

Section AI.3: Owner Information

☐ **Owner same as applicant**

Name: Kroger, Limited Partnership II

Title: The Kroger Company

Mailing Address:

Street or P.O. Box: 1014 Vine Street, Suite 1000

City: Cincinnati **State:** Ohio **Zip Code:** 45202-1119

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

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.

	9/6/2024
Authorized Signature	**Date**
Justin Menees	Site Leader
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

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

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Additional Documentation

___ Additional Documentation attached

Source Name: **Kenlake Foods**

KY EIS (AFS) #: **21-** **035-00031**

Permit #: **F-19-017**

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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: Kenlake Foods

Title: (if individual)

Mailing Address: **Street or P.O. Box:** 300 North L.P. Miller Street
City: Murray **State:** Kentucky **Zip Code:** 42071

Email: (if individual)

Phone: (270) 762-5100

Technical Contact

Name: Kenneth Holdener

Title: Senior Engineering Leader

Mailing Address: **Street or P.O. Box:** 300 North L.P. Miller Street
City: Murray **State:** Kentucky **Zip Code:** 42071

Email: ken.holdener@kroger.com

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Title: The Kroger Company

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City: Cincinnati **State:** Ohio **Zip Code:** 45202-1119

Email:

Phone:

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

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Requested Action: *(check all that apply)*

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☐ 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)		☐ 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:

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- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
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- ☑ DEP7007DD Insignificant Activities
- ☐ DEP7007EE Internal Combustion Engines
- ☐ DEP7007FF Secondary Aluminum Processing
- ☐ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☑ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☑ Site Map
- ☑ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☑ Other: _____

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.

Authorized Signature	9/6/2024 **Date**
Justin Menees **Type or Printed Name of Signatory**	Site Leader **Title of Signatory**

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

Section AI.7: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007A

Indirect Heat Exchangers and Turbines

___ Section A.1: General Information

___ Section A.2: Operating and Fuel Information

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

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

____ Manufacturer's specifications

Source Name: Kenlake Foods

KY EIS (AFS) #: **21-035-00031**

Permit #: F-19-017

Agency Interest (AI) ID: 509

Date: 9/6/2024

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	SCC Code	SCC Units	Control Device ID	Stack ID
EU01	BOILER #1	EU01	Indirect Water Heater	Indirect Heat Exchanger	Shell and Tube	Cleaver Brooks	CB-200-100	1982	10200603	MMCF	N/A	E01
EU02	BOILER #2	EU02	Indirect Water Heater	Indirect Heat Exchanger	Shell and Tube	Cleaver Brooks	CB-200-100	1982	10200603	MMCF	NA	E02
EU03a	NUT ROASTER #1	EU03	Nut Roaster	Indirect Heat Exchanger	Coil-Type	Mastermatic	C24-30	1982	10200603	MMCF	N/A	E03a
EU06	NUT ROASTER #2	EU06	Nut Roaster	Indirect Heat Exchanger	Coil-Type	Heat and Control	CTHX-20	2005	10200603	MMCF	N/A	E06

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007A

Indirect Heat Exchangers and Turbines

___ Section A.1: General Information

___ Section A.2: Operating and Fuel Information

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

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.

____ Manufacturer's specifications

Source Name: Kenlake Foods

KY EIS (AFS) #: **21-035-00031**

Permit #: F-19-017

Agency Interest (AI) ID: 509

Date: 9/6/2024

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	SCC Code	SCC Units	Control Device ID	Stack ID
EU01	BOILER #1	EU01	Indirect Water Heater	Indirect Heat Exchanger	Shell and Tube	Cleaver Brooks	CB-200-100	1982	10200603	MMCF	N/A	E01
EU02	BOILER #2	EU02	Indirect Water Heater	Indirect Heat Exchanger	Shell and Tube	Cleaver Brooks	CB-200-100	1982	10200603	MMCF	NA	E02
EU03a	NUT ROASTER #1	EU03	Nut Roaster	Indirect Heat Exchanger	Coil-Type	Mastermatic	C24-30	1982	10200603	MMCF	N/A	E03a
EU06	NUT ROASTER #2	EU06	Nut Roaster	Indirect Heat Exchanger	Coil-Type	Heat and Control	CTHX-20	2005	10200603	MMCF	N/A	E06

Section A.2: Operating and Fuel Information

Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input *(MMBTU/hr)*	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content *(%)*	Sulfur Content *(%)*
	Space Heat	Process Heat	Power	Emergency			*(Specify units: hp, MW, or lb steam/hr)*					*(Specify units: Btu/lb, Btu/gal, or Btu/scf)*			
EU01	100	0	0	0	4.148	3,450	steam/hr	N/A	Primary	Natural Gas	1021	BTU/scf	8736		
EU02	100	0	0	0	4.148	3,450	steam/hr	N/A	Primary	Natural Gas	1021	BTU/scf	8736		
EU03a	0	100	0	0	2.7			N/A	Primary	Natural Gas	1021	BTU/scf	8736		
EU06	0	100	0	0	2.8			N/A	Primary	Natural Gas	1021	BTU/scf	8736		

Emission	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity	Rated Capacity Power Output		Describe Operating Scenario	Classify Fuel as	Identify Fuel Type: Coal, Natural Gas, Wood,	Heat Content (HHV)		Maximum Operating	Ash	Sulfur

Section A.3: Notes, Comments, and Explanations

Division for Air Quality

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

DEP7007B

Manufacturing or Processing Operations

___ Section B.1: Process Information
___ Section B.2: Materials and Fuel Information
___ Section B.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
___ Attach a flow diagram
___ Attach SDS

Source Name: **Kenlake Foods**
KY EIS (AFS) #: **21- 035-00031**
Permit #: **F-19-017**
Agency Interest (AI) ID: **509**
Date: **9/6/2024**

Section B.1: Process Information

Emission Unit #	Emission Unit Name	Describe Emission Unit	Process ID	Process Name	Manufacturer	Model No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Is the Process Continuous or Batch?	Number of Batches per 24 Hours *(if applicable)*	Hours per Batch *(if applicable)*
EU04	Ambient Air Cooler	Ambient Air Cooler	EU04	Ambient Air Cooler	Heat and Control	AAC-3017	06/2010	Continuous	N/A	N/A
EU07	Nut Roaster #2	Nut Roaster #2	EU07	Nut Roaster	Heat and Control	OR-5414	07/2005	Continuous	N/A	N/A
EU08	Ambient Air Cooler	Ambient Air Cooler	EU08	Ambient Air Cooler	Heat and Control	AAC-5614	07/2005	Continuous	N/A	N/A

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit *(tons/hr)*	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content *(%)*	Ash Content *(%)*
				(Specify Units/hr)				*(Specify Units/hr)*			*(Specify Units)*		*(Specify Units)*		
EU04	Ambient Air Cooler	Peanuts	5,000	lbs/hr	2.5	Roasted Peanuts	5,000	lbs/hr	N/A						
EU07	Nut Roaster #2	Peanuts	7,500	lbs/hr	3.75	Roasted Peanuts	7,500	lbs/hr	N/A						
EU08	Ambient Air Cooler	Peanuts	7,500	lbs/hr	3.75	Roasted Peanuts	7,500	lbs/hr	N/A						

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				(Specify Units/hr)				*(Specify Units/hr)*			*(Specify Units)*		*(Specify Units)*		

Section B.3: Notes, Comments, and Explanations

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

Source Name: Kenlake Foods

KY EIS (AFS) #: 21- 035-00031

Permit #: F-19-017

Agency Interest (AI) ID: 509

Date: 9/6/2024

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)*
EU01	BOILER #1	EU01	Hot Water Heater	N/A	N/A	E01	4.04	Particulates	7.6	AP-42	0.00%	0.00%	0.03	0.03	0.13	0.13
								Sulfur Dioxide	0.6	AP-42	0.00%	0.00%	0.002	0.002	0.01	0.01
								Nitrogen Oxides	100	AP-42	0.00%	0.00%	0.4	0.4	1.73	1.73
								Carbon Monoxide	84	AP-42	0.00%	0.00%	0.33	0.33	1.46	1.46
								Volatile Organic compounds	5.5	AP-42	0.00%	0.00%	0.02	0.02	0.1	0.1

Division for Air Quality

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DEP7007N

Source Emissions Profile

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Date: 9/6/2024

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)*
EU02	BOILER #2	EU02	Hot Water Heater	N/A	N/A	E02	4.04	Particulates	7.6	AP-42	0.00%	0.00%	0.03	0.03	0.13	0.13
								Sulfur Dioxide	0.6	AP-42	0.00%	0.00%	0.002	0.002	0.01	0.01
								Nitrogen Oxides	100	AP-42	0.00%	0.00%	0.4	0.4	1.73	1.73
								Carbon Monoxide	84	AP-42	0.00%	0.00%	0.33	0.33	1.46	1.46
								Volatile Organic compounds	5.5	AP-42	0.00%	0.00%	0.02	0.02	0.1	0.1

Division for Air Quality

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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

Source Name: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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)*
EU03a	Nut Roaster #1	EU03a	Nut Roster #1	N/A	N/A	E03-A	2.63	Particulates	7.6	AP-42	0.00%	0.00%	0.02	0.02	0.09	0.09
								Sulfur Dioxide	0.6	AP-42	0.00%	0.00%	0.002	0.002	0.01	0.01
								Nitrogen Oxides	100	AP-42	0.00%	0.00%	0.26	0.26	1.13	1.13
								Carbon Monoxide	84	AP-42	0.00%	0.00%	0.22	0.22	0.95	0.95
								Volatile Organic compounds	5.5	AP-42	0.00%	0.00%	0.01	0.01	0.06	0.06

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Source Emissions Profile

__ Section N.1: Emission Summary
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__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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)*
EU03b	Nut Roaster #1 Vegetable Oil	EU03b	Nut Roster #1 Vegetable	N/A	N/A	E03-B	2.5	PM10	0.8	AP-42	0.00%	0.00%	2	2	8.76	8.76
								VOC	0.085	AP-42	0.00%	0.00%	0.21	0.21	0.93	0.93

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Source Emissions Profile

__ Section N.1: Emission Summary
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__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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)*
EU04	Ambient Air Cooler	EU04	Ambient Air Cooler			E04	2.5	PM10	0.26	AP-42			N/A	0.33	N/A	1.42
								PM2.5	0.078	AP-42			N/A	0.1	N/A	0.43

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Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
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__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: Kenlake Foods

KY EIS (AFS) #: 21- 035-00031

Permit #: F-19-017

Agency Interest (AI) ID: 509

Date: 9/6/2024

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)*
EU05	Dry Pack Central Vacuum	EU05	Dry Pack Central Vacuum	Cyclone	CV-1	E05	0.0825	Particulates	2000	Manufacturer	99.90%	99.98%	165	0.04	722.7	0.18
				Filter	CV-2			PM10	2000	Manufacturer	99.90%	99.98%	165	0.04	722.7	0.18

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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

Source Name: Kenlake Foods

KY EIS (AFS) #: 21- 035-00031

Permit #: F-19-017

Agency Interest (AI) ID: 509

Date: 9/6/2024

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)*
EU06	Nut Roaster #2	EU06	Indirect Heat Exchanger	N/A	N/A	E06	2.8	Particulates	7.6	AP-42	0.00%	0.00%	0.02	0.02	0.09	0.09
								Sulfur Dioxide	0.6	AP-42	0.00%	0.00%	0.002	0.002	0.01	0.01
								Nitrogen Oxides	100	AP-42	0.00%	0.00%	0.27	0.27	1.2	1.2
								Carbon Monoxide	84	AP-42	0.00%	0.00%	0.23	0.23	1.01	1.01
								Volatile Organic compounds	5.5	AP-42	0.00%	0.00%	0.02	0.02	0.07	0.07

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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

Source Name: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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)*
EU07	Nut Roaster #2 Vegetable Oil	EU07	Nut Roster #1 Vegetable	Oil De-mister	F-1	E07	3.75	PM10	0.26	AP-42	99.90%	99.90%	0.49	0.0005	2.14	0.002
								VOC	0.085	AP-42	0.00%	0.00%	0.32	0.32	1.4	1.4
								PM2.5	0.31	AP-42	85.00%	85.00%	0.58	0.09	2.55	0.38

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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

Source Name: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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)*
EU08	Ambient Air Cooler	EU08	Ambient Air Cooler	Mesh Pad Screen	F-2	E08	3.75	PM10	0.26	AP-42	99.90%	99.90%	0.49	0.0005	2.14	0.002
								PM2.5	0.31	AP-42	85.00%	85.00%	0.58	0.09	2.55	0.38

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)*
E01	BOILER #1 (EU01)	1	37.14				1120	150	24
E02	BOILER #2 (EU02)	1	36.93				1120	150	24
E03-A	Nut Roaster #1(EU03a)	1	38.34				693	120	15
E03-B	Nut Roaster #1 Vegtable Oil (EU03b)	1	38.31				1200	86	10
E04	Ambient Air Cooler (EU04)	2.5	32.66				10600	75	36
E05	Dry Pack Central Vacuum System (EU05)	0.33	34.74				600	75	120
E06	Indirect Heat Exchanger (EU06)	1.67	37.33				1260	950	13.32
E07	Nut Roaster #2 (EU07)	1.33	37.25				1250	260	15
E08	Ambient Air Cooler (EU08)	2.5	33.25				21,560	120	73.3

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)*
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section N.4: Notes, Comments, and Explanations

N.2 - See Attached Facility Layout

Ambient Air Cooler EU04: 50% of emissions assigned to this unit. The remaining 50 % assigned to Nut Roaster #1. Emission factor used already includes controls, so no additional control efficiencies are added.

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DEP7007GG

Control Equipment

Additional Documentation

___ Complete Sections GG.1 through GG.12, as applicable

___ Attach manufacturer's specifications for each control device

___ Complete DEP7007AI

Source Name: **Kenlake Foods**

KY EIS (AFS) #: **21-** **035-00031**

Permit #: **F-19-017**

Agency Interest (AI) ID: **509**

Date: **9/6/2024**

Section GG.1: General Information - Control Equipment

Control Device ID #	Control Device Name	Cost	Manufacturer	Model Name/ Serial #	Date Installed	Inlet Gas Stream Data For All Control Devices					Inlet Gas Stream Data For Condensers, Adsorbers, Afterburners, Incinerators, Oxidizers Only			Equipment Operational Data For All Control Devices		
						Temperature (°F)	Flowrate (scfm @ 68 °F)	Average Particle Diameter (μm)	Particle Density (lb/ft^3) or Specific Gravity	Gas Density (lb/ft^3)	Gas Moisture Content (%)	Gas Composition	Fan Type	Pressure Drop Range ($in. H_2O$)	Pollutants Collected/ Controlled	Pollutant Removal (%)
CV-1	Dry Pack Central Vacuum	N/A	Lamson Blower	5155 O-AD 250 F Series	Mar-83	75	820	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Particulates	75
CV-2	Dry Pack Central Vaccum	N/A	Lamson Blower	5155 O-AD 250 F Series	Mar-83	75	820	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Particulates	99.9
F-1	Oil De-mister	N/A	ACS Industries	7CA / 38F	Jul-05	260	2,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PM>5;PM2.5	99.9;85
F-2	Ambient Air Cooler Mesh Pad Screen	N/A	Air-Maze	P-5	Jul-05	120	21,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PM>5;PM2.5	99.9;85

Section GG.2: Flare Source Information

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Flare	Type of Flare (e.g. steam-assisted, air-assisted, nonassisted)	Process Gas Flowrate *(acfm)*	Net Heating Value of Stream(s) (Btu/scf)	Removal Efficiency *(%)*	Flare Rated Capacity *(MMBtu/hr)*
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.3: Cyclone

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Cyclone	Identify Number of Cyclones: Single or Multiple	Identify Type: High-Efficiency, Conventional, or High-Throughput	Inlet Height *(ft)*	Inlet Width *(ft)*	Bottom Cone Height *(ft)*	Body Height *(ft)*	Body Diameter *(ft)*	Dust Outlet Tube Diameter *(ft)*	Gas Outlet Tube Diameter *(ft)*	Vortex Finder Height *(ft)*
CV-1	EU05	Single	Conventional	11.5	0.25	1.5	7	3	0.67	0.42	N/A

Section GG.4: Electrostatic Precipitator (ESP)

Control Device ID #	Identify all Emission Units and Control Devices that Feed to ESP	Identify Type: Dry negative corona, Wet negative corona or Wet positive corona	Number of Stages	Number of Plates per Stage	Plate Spacing *(in)*	ESP Total Width *(ft)*	ESP Total Height *(ft)*	Collection Plate Height *(ft)*	Length of Collection Plate *(ft)*	Particle Migration (Drift) Velocity *(specify units)*	Particle Resistivity *(specify units)*	Primary and Secondary Voltage Across Plates *(volts)*	Primary and Secondary Current *(amperes)*
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.5: Scrubber

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Scrubber	Identify Type of Scrubber: Venturi, Packed Bed, Spray Tower, or Other (specify)	For Venturi Scrubbers:	For Packed Bed Scrubbers:		For Spray Towers:		Identify Type of Flow: Concurrent, Countercurrent, or Crossflow	Length in Direction of Gas Flow *(ft)*	Cross-Sectional Area *(ft^2)*	Venturi Throat Velocity *(ft/s)*	Mist Eliminator			Scrubbing Liquid			
			Identify Throat Type: Fixed or Adjustable	Identify Packing Type	Packing Height *(in)*	Number of Nozzles	Nozzle Pressure *(psig)*					Identify Type: Mesh or Vane	Cross-Sectional Area *(ft^2)*	Pressure Drop *(in. H_2O)*	Chemical Composition	Flowrate *(gal/min)*	Fresh Liquid Makeup Rate *(gal/min)*	Describe Disposal Method of Scrubber Effluent
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.6: Filter

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Filter	Identify Type of Filter Unit: Baghouse, Cartridge Collector, or Other (specify)	Identify Type of Filtering Material: Fabric, Paper, Synthetic, or Other (specify)	Total Filter Area *(ft²)*	Effective Air-to-Filter Ratio *(acfm/ft²)*	Continuous Monitoring Instrumentation (e.g. COMS, BLDS, none)	Additional Materials Introduced into the Control System (e.g. lime, carbon)		Identify Cleaning Method: Shaker, Pulse Air, Reverse Air, Pulse Jet, or Other (specify)	Identify Gas Cooling Method: Ductwork, Heat Exchanger, Bleed-in Air, Water Spray, or Other (specify)	For Ductwork:		For Bleed-in Air:	For Water Spray:
							Material	Injection Rate *(lb/hr)*			Length *(ft)*	Diameter *(ft)*	Flowrate *(scfm @ 68°F)*	Flowrate *(gal/min)*
CV-2	EU05	Centrifugal Separator	Polyester	148	N/A	N/A	N/A	N/A	Pulse Air	N/A	N/A	N/A	820	N/A
F-1	EU07	Passive Filter	Wire Mesh	288	N/A	N/A	N/A	N/A	Remove, Shake, soak in caustic, and rinse	N/A	N/A	N/A	2000	N/A
F-2	EU08	Passive Filter	Wire Mesh	1050	N/A	N/A	N/A	N/A	Remove, Shake, soak in caustic, and rinse	N/A	N/A	N/A	21,500	N/A

Section GG.7: Afterburner/Incinerator/Oxidizer

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Afterburner/Incinerator/ Oxidizer	Identify Type: Afterburner, Incinerator, Oxidizer, or Other (specify)	Number of Burners	Burner Rating *(BTU/hr)*	Dimensions of Combustion Chamber *(specify units)*	Residence Time *(sec)*	Combustion Chamber Temperature *(°F)*	Type of Catalyst (if applicable)	Type of Heat Exchanger (if applicable)	Auxiliary Fuel							Composition and Quantities of Combusted Waste
										Identify Fuel Type	Higher Heating Value *(MMBtu/scf)*	Hourly Fuel Usage *(scf/hr)*	% Sulfur (Maximum)	% Sulfur (Average)	% Ash (Maximum)	% Ash (Average)	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.8: Adsorber

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Adsorber	Identify Adsorbate	Identify Adsorbent: Activated carbon, Activated alumina, Silica Gel, Synthetic Polymers, Zeolite, or Other (specify)	Dimensions of Each Bed				Type of Regeneration: Replacement, Steam, or Other (specify)	Regeneration Time *(minutes)*	Method of Regeneration: Alternate Use of Beds, Source Shutdown, or Other (specify)	Time On-line Before Regeneration *(minutes)*
				Thickness in Direction of Gas Flow *(in)*	Cross-Sectional Area *(in^2)*	Weight of Adsorbent per Bed *(lb)*	Number of Beds				
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.9: Condenser

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Condenser	Identify Type of Condenser: Spray Tower, Jet Ejector, Barometric, Single-Pass Shell-and-Tube, or Multi-Pass Shell-and-Tube (if multi-pass, indicate number of passes)	Identify Type of Coolant: Water, Brine, Liquid Nitrogen, CFC/HFC, or Other (specify)	Coolant Temperature		Coolant Liquid Flowrate *(gpm)*	Coolant Gas Flowrate *(scfm @ 68 °F)*	Condensing Surface Area *(specify units)*	Outlet Gas Temperature *(°F)*	Outlet Gas Composition
				Inlet *(°F)*	Outlet *(°F)*					
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.10: Selective Catalytic Reduction (SCR) / Selective Non-catalytic Reduction (SNCR)

Control Device ID #	Identify all Emission Units and Control Devices that Feed to SCR/SNCR	Type (SCR/SNCR)	Gas Composition	Injection Grid Design (e.g. honeycomb)	Design Temperature Range		Reagent			Maximum Design Ammonia Slip *(ppm)*	SCR Only			
											Catalyst			
					Min *(°F)*	Max *(°F)*	Type	Injection Rate			Composition	Volume *(ft^3)*	Weight *(lb)*	Replacement Schedule
								Min *(lb/hr)*	Max *(lb/hr)*					
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section GG.11: Other Control Equipment

Control Device ID #	Identify all Emission Units and Control Devices that Feed to Control Equipment	**Type of Control Equipment** (provide description and a diagram with dimensions)
N/A	N/A	N/A

Section GG.12: Notes, Comments, and Explanations

Division for Air Quality

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DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation(s)

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirements

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: **Kenlake Foods**

KY EIS (AFS) #: **21-035-00031**

Permit #: **F-19-017**

Agency Interest (AI) ID: **509**

Date: **9/6/2024**

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU10	Emergency Generator	40 CFR 63 Subpart ZZZZ	N/A		63.6625(f) Install non-resettable hour meter		Visual Inspection
		40 CFR 63 Subpart ZZZZ			tenance and readiness testing li		Hour meter and maintenance logs.

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU10	Emergency Generator	N/A	N/A	N/A	N/A

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU10	Emergency Generator	N/A	40 CFR 63 Subpart ZZZZ, 63.6603(a) Change oil every 500 operating hours or annually.	Operating Hours	Electronic work orders/maintenance records
			40 CFR 63 Subpart ZZZZ, 63.6603(a) Inspect Air cleaner and Spark plugs every 1000 operating hours or annually.	Operating Hours	Electronic work orders/maintenance records
			40 CFR 63 Subpart ZZZZ, 63.6603(a) Inspect hoses and belts every 500 operating hours or annually.	Operating Hours	Electronic work orders/maintenance records
			40 CFR 63 Subpart ZZZZ, 63.6655(e) Keep records of maintenance.	Maintenance Records	Electronic work orders/maintenance records
			40 CFR 63 Subpart ZZZZ, 63.6625(e) Maintain and operate according to manufacturer's instructions.	Maintenance Records	Electronic work orders/maintenance records, keep copy of manufacturer's instructions

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU10	Emergency Generator	N/A	N/A	N/A	N/A

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU10	Emergency Generator	N/A	N/A	N/A	N/A

Section V.6: Notes, Comments, and Explanations

Division for Air Quality

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

DEP7007EE

Internal Combustion Engines

___ Section EE.1: General Information
___ Section EE.2: Operating Information
___ Section EE.3: Design Information
___ Section EE.4: Fuel Information
___ Section EE.5: Emission Factor Information
___ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach EPA certification of the engine

Source Name: **Kenlake Foods**
KY EIS (AFS) #: **21- 035-00031**
Permit #: **F-19-017**
Agency Interest (AI) ID: **509**
Date: **9/6/2024**

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
EU10	Emergency Generator	N/A	N/A	Kohler	11-RMY	2002	2002	12/2002	N/A	40 CFR 63 Subpart ZZZZ

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency,Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? *(Yes/No)*	Rental Time Period *(hrs)*	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
EU10	Emergency	<24/yr	No	N/A	N/A

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power *(bhp)*	Maximum Engine Speed *(rpm)*	Total Displacement *(L)*	Number of Cylinders
EU10	Stationary	Spark Ignition	N/A	1.01	3600	0.725	2

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used *(%)*	Maximum Fuel Consumption	Heat Content	Sulfur Content *(%)*	SCC Code	SCC Units
EU10	Primary	Natural Gas	N/A	N/A	N/A	1021 BTU/scf	N/A	20200202	MMCF

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
EU10	Natural Gas	Particulates	0.002	lbs/hr	AP 42
		Sulfur Dioxide	0.001	lbs/hr	AP 42
		Nitrogen Oxides	0.8	lbs/hr	AP 42
		Carbon Monoxide	0.11	lbs/hr	AP 42
		Volatile Organic Compounds	0.02	lbs/hr	AP 42

Section EE.6: Notes, Comments, and Explanations

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: Kenlake Foods
KY EIS (AFS) #: 21- 035-00031
Permit #: F-19-017
Agency Interest (AI) ID: 509
Date: 9/6/2024

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
AI01	Water Heater 275,000 BTU/hr		KDPE List of insignificant activities #11	See Attached
AI02	Water Heater 600,000 BTU/hr		KDPE List of insignificant activities #11	See Attached
AI03	Mechanical Room Make-up Air System 1,720,000 BTU/hr		KDPE List of insignificant activities #15	See Attached
AI04	Clamshell Line Make-up Air System 1,103,000 BYU/hr		KDPE List of insignificant activities #15	See Attached
AI05	Bulk Sugar Receiving			See Attached
AI06	Sugar Transfer System			See Attached

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
AI07	Emergency Generator		401 KAR 52:030, Section 17; KDPE List of insignificant activities #26;	See Attached

Section DD.2: Signature Block

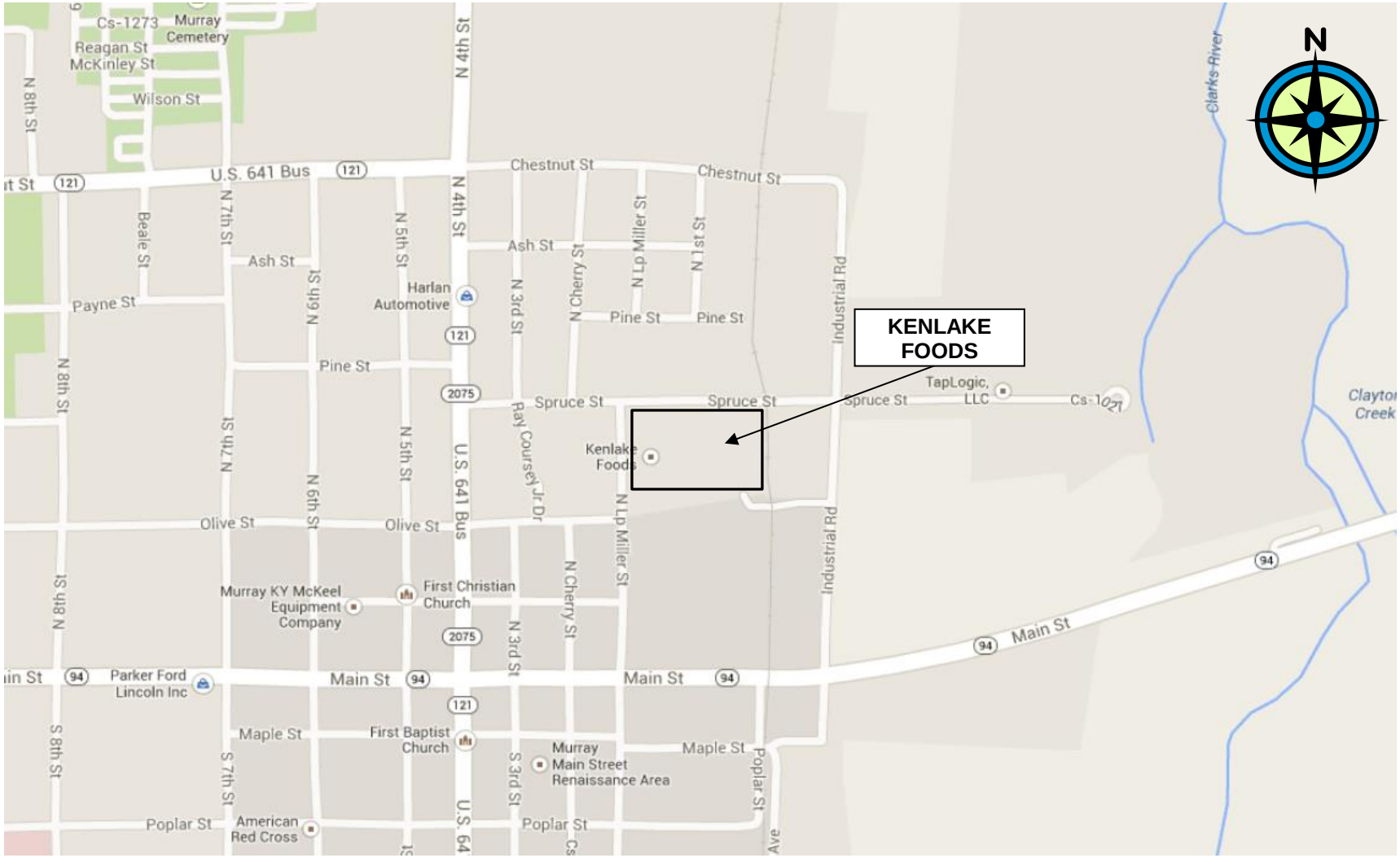
I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING 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	9/6/24 Date
	Justin Menees	Site Leader
	Type/Print Name of Siguatory	Title of Siguatory

KENLAKE FOODS
300 NORTH L.P. MILLER STREET, MURRAY, KY 42071

DEVELOPED: GNF	APPROVED: JEW	DATE: Revised 7/2024	SCALE: None	Job #: 11225

AREA MAP (N.T.S.)

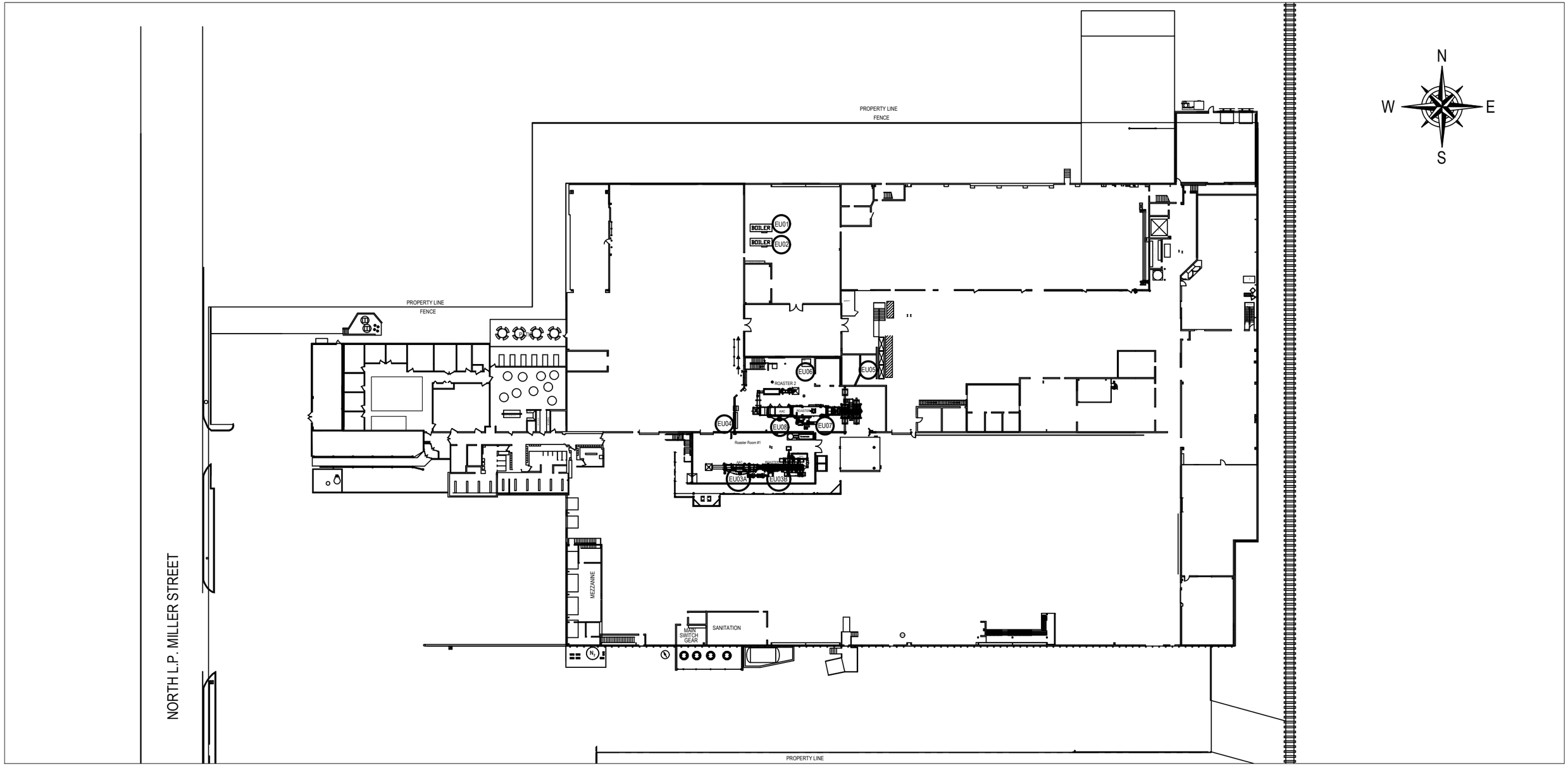


CLIENT:	KENLAKE FOODS	JOB NO:	11225
PROJECT:	KENLAKE FOODS AIR PERMIT RENEWAL	DRAWN BY:	GNF
LOCATION:	MURRAY, KY	DATE:	08/28/2024
SKETCH TITLE:	KENLAKE FLOOR PLAN	REVISION NO:	
		REVISION DATE:	
		SKETCH FILE PATH:	H:\00112250\enviro\Air Pollution\AP Permit Renewal

SKETCH

SKETCH NO:

SK-1



HIXSON
ARCHITECTURE ENGINEERING INTERIORS

659 Van Meter Street Cincinnati 45202-1568 T: 513 241 1230 F: 513 241 1287 hixson-inc.com

CLIENT: KENLAKE FOODS

PROJECT: KENLAKE FOODS AIR PERMIT RENEWAL

LOCATION: MURRAY, KY

SKETCH TITLE: KENLAKE ROOF PLAN

JOB NO: 11225

DRAWN BY: GNF

DATE: 08/28/2024

REVISION NO:

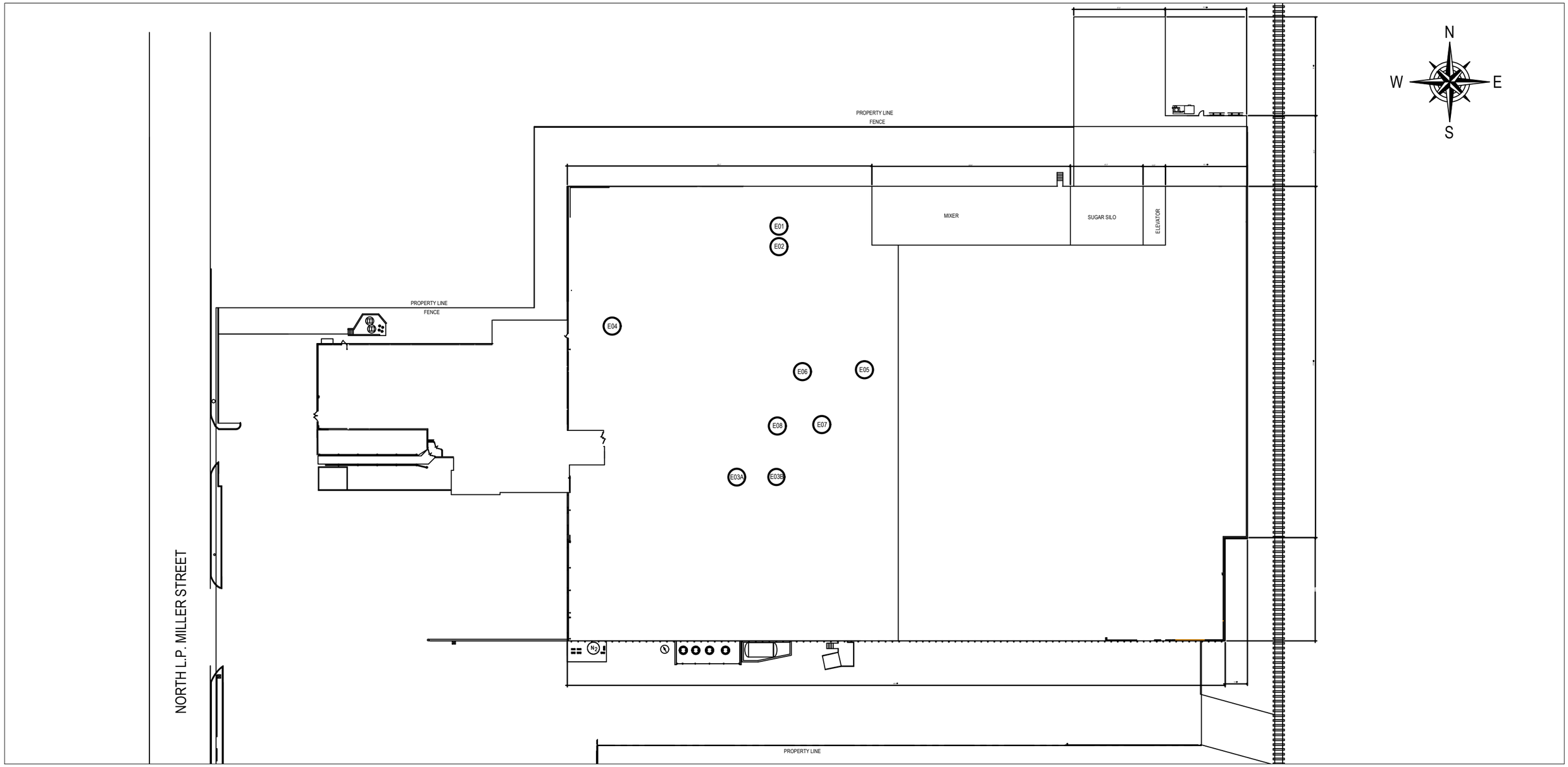
REVISION DATE:

SKETCH FILE PATH: H:\00112250\enviro\Air Pollution\AP Permit Renewal

SKETCH

SKETCH NO:

SK-2



HIXSON
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659 Van Meter Street Cincinnati 45202-1568 T: 513 241 1230 F: 513 241 1287 hixson-inc.com

PROCESS FLOW DIAGRAM

NUT ROASTER #1

NUT ROASTING PROCESS

HIXSON

DEVELOPED: GNF | APPROVED: JEW | DATE: 7/2024 | REVISED: | 11225

THE KROGER COMPANY - KENLAKE FOODS
300 NORTH L.P. MILLER STREET, MURRAY, KENTUCKY 42071

PROCESS FLOW DIAGRAM

NUT ROASTER #2

NUT ROASTING PROCESS

HIXSON

DEVELOPED: GNF | APPROVED: JEW | DATE: 7/2024 | REVISED: | 11225

THE KROGER COMPANY - KENLAKE FOODS
300 NORTH L.P. MILLER STREET, MURRAY, KENTUCKY 42071

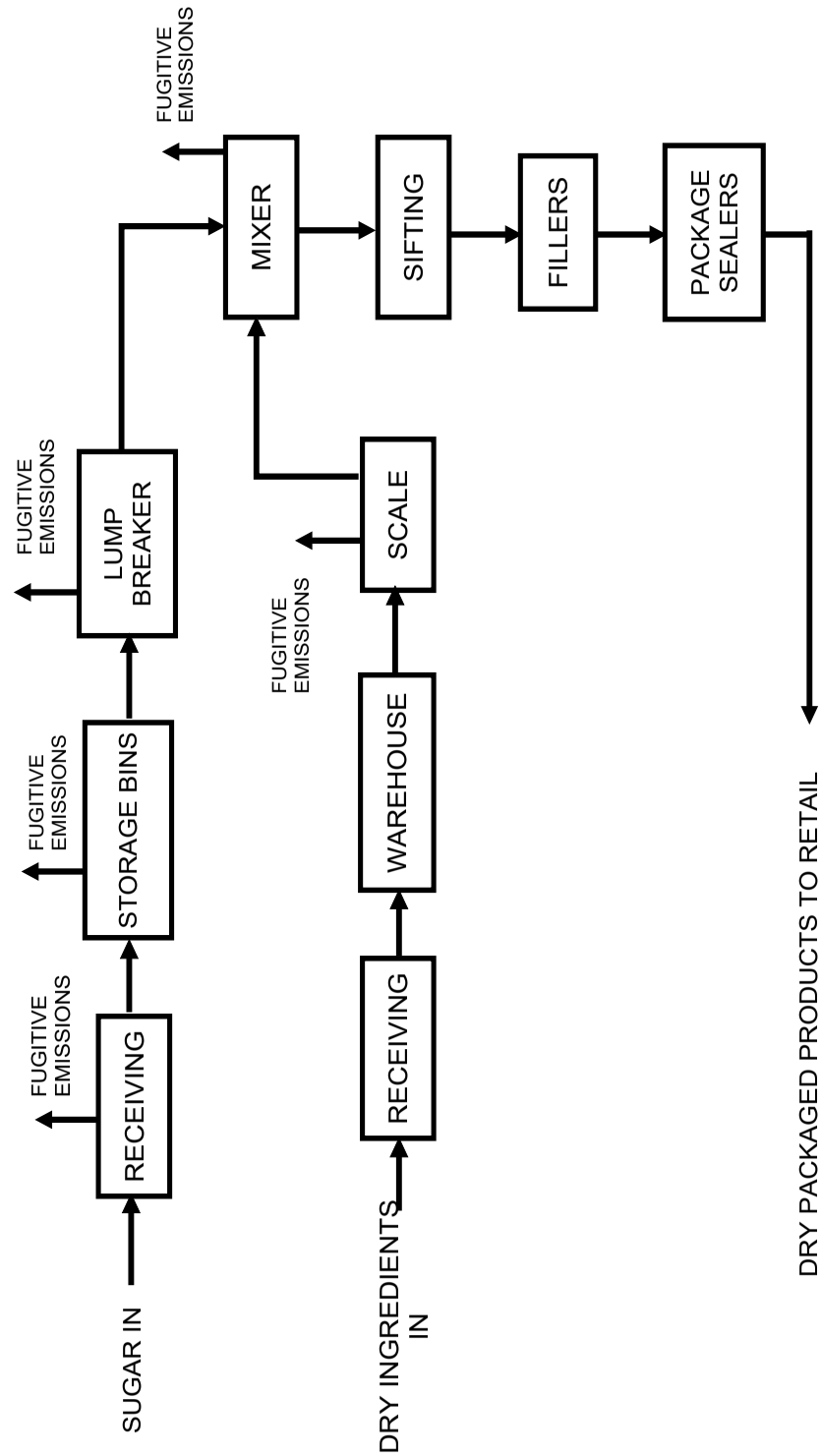
THE KROGER COMPANY - KENLAKE FOODS
300 NORTH L.P. MILLER STREET, MURRAY, KENTUCKY 42071

DEVELOPED: GNF	APPROVED: JEW	DATE: 7/2024	REVISED:	11225

PROCESS FLOW DIAGRAM

DRY PACK PROCESS

FUGITIVE AIR EMISSIONS VENTED INSIDE BUILDING



NOTE: FUGITIVE AIR EMISSIONS OF DRY PACK INGREDIENT DUST IS COLLECTED AND HANDLED BY THE DRY PACK CENTRAL VACUUM SYSTEM.

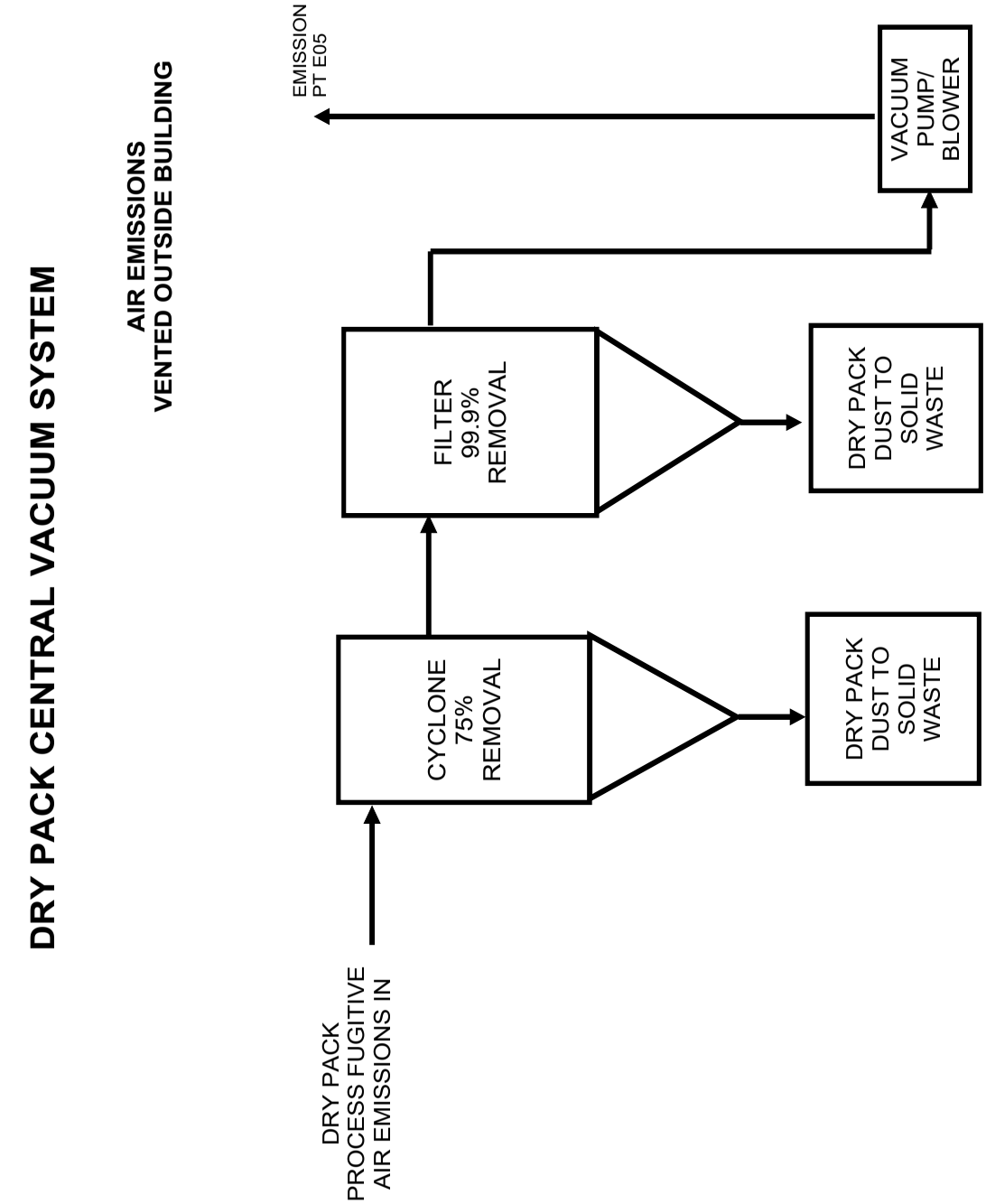
HIXSON

THE KROGER COMPANY - KENLAKE FOODS
300 NORTH L.P. MILLER STREET, MURRAY, KENTUCKY 42071

DEVELOPED: GNF	APPROVED: JEW	DATE: 7/2024	REVISED:	11225

PROCESS FLOW DIAGRAM

DRY PACK CENTRAL VACUUM SYSTEM



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INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

CONTROLLED EMISSION TOTALS

FACILITY: KENLAKE FOODS
SOURCE: PLANT WIDE

DATE: July 2024
JOB #: 11225

CRITERIA POLLUTANTS

	SIGNIFICANT ACTIVITIES								INSIGNIFICANT ACTIVITIES							
CONTROLLED EMISSIONS	EU 01	EU 02	EU 03 - Nut Roaster #1		EU 04	EU 05	EU 06	EU 07	EU 08						WATER HEATERS		
	Boiler #1	Boiler #2	NATURAL GAS	VEG. OIL	Nut Roaster #1 Air Cooler	Dry Pack Central Vac	Heat Exchanger	Nut Roaster #2	Nut Roaster #2 Air Cooler	MECHANICAL ROOM AIR	CLAMSHELL LINE AIR	Emergency Generator	Bulk Sugar Receiving	Sugar Transfer System	#1 & #2	#3	TOTALS
PARTICULATES																	
Hourly, (lbs/hr)	0.03	0.03	0.00	2.00	0.05	0.04	0.02	0.07	0.07	0.01	0.01	0.00	1.05	0.42	0.01	0.00	**3.83**
Daily, (lbs/day)	0.74	0.74	0.09	48.00	1.18	0.99	0.50	1.77	1.77	0.31	0.20	0.03	25.20	10.08	0.21	0.05	**91.86**
Annual, (tons/year)	0.14	0.14	0.02	8.76	0.21	0.18	0.09	0.32	0.32	0.06	0.04	0.00	4.60	1.84	0.04	0.01	**16.76**
PARTICULATES (PM10)																	
Hourly, (lbs/hr)	0.00	0.00	0.00	0.00	0.0003	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**
Daily, (lbs/day)	0.00	0.00	0.00	0.00	0.01	0.99	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.02**
Annual, (tons/year)	0.00	0.00	0.00	0.00	0.001	0.18	0.00	0.002	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.19**
PARTICULATES (PM2.5)																	
Hourly, (lbs/hr)	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.20**
Daily, (lbs/day)	0.00	0.00	0.00	0.00	1.17	0.00	0.00	1.76	1.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**4.68**
Annual, (tons/year)	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.85**
SULFUR DIOXIDE																	
Hourly, (lbs/hr)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.01**
Daily, (lbs/day)	0.06	0.06	0.01	0.00	0.00	0.00	0.04	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.02	0.00	**0.22**
Annual, (tons/year)	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**
NITROGEN OXIDES																	
Hourly, (lbs/hr)	0.41	0.41	0.05	0.00	0.00	0.00	0.27	0.00	0.00	0.17	0.11	0.80	0.00	0.00	0.06	0.03	**2.30**
Daily, (lbs/day)	9.75	9.75	1.21	0.00	0.00	0.00	6.59	0.00	0.00	4.04	2.59	11.99	0.00	0.00	1.41	0.65	**47.98**
Annual, (tons/year)	1.78	1.78	0.22	0.00	0.00	0.00	1.20	0.00	0.00	0.74	0.47	0.01	0.00	0.00	0.26	0.12	**6.58**
CARBON MONOXIDE																	
Hourly, (lbs/hr)	0.34	0.34	0.04	0.00	0.00	0.00	0.23	0.00	0.00	0.14	0.09	0.11	0.00	0.00	0.10	0.02	**1.42**
Daily, (lbs/day)	8.19	8.19	1.02	0.00	0.00	0.00	5.53	0.00	0.00	3.40	2.18	1.64	0.00	0.00	2.37	0.54	**33.06**
Annual, (tons/year)	1.49	1.49	0.19	0.00	0.00	0.00	1.01	0.00	0.00	0.62	0.40	0.00	0.00	0.00	0.43	0.10	**5.74**
VOLATILE ORGANIC COMPS																	
Hourly, (lbs/hr)	0.02	0.02	0.00	0.21	0.00	0.00	0.02	0.32	0.00	0.01	0.01	0.02	0.00	0.00	0.01	0.00	**0.64**
Daily, (lbs/day)	0.54	0.54	0.07	5.10	0.00	0.00	0.36	7.65	0.00	0.22	0.14	0.35	0.00	0.00	0.16	0.04	**15.15**
Annual, (tons/year)	0.10	0.10	0.01	0.93	0.00	0.00	0.07	1.40	0.00	0.04	0.03	0.00	0.00	0.00	0.03	0.01	**2.70**

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 01 - Boiler #1 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 4,148,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 4,063 FT^3/HR 97,504 FT^3/DAY 35,589,109 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) = 10.58 FT^3/FT^3

COMBUSTION PRODUCTS (PC) = 11.73 FT^3/FT^3

EXCESS AIR (EA) = 0.25 (OR 25%)

STACK DIAMETER (D) = 0.33 FT AREA (A)= 0.09 FT^2

STACK TEMPERATURE (Tf) = 150 F

STACK FLOW RATE = 1,120 ACFM

STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 218 FT/SEC

STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.03	0.74	270.48	0.14
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.06	21.35	0.01
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.41	9.75	3558.91	1.78
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.34	8.19	2989.49	1.49
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.02	0.54	195.74	0.10

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 02 -Boiler #2 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 4,148,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 4,063 FT^3/HR 97,504 FT^3/DAY 35,589,109 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) = 10.58 FT^3/FT^3

COMBUSTION PRODUCTS (PC) = 11.73 FT^3/FT^3

EXCESS AIR (EA) = 0.25 (OR 25%)

STACK DIAMETER (D) = 0.33 FT AREA (A)= 0.09 FT^2

STACK TEMPERATURE (Tf) = 150 F

STACK FLOW RATE = 1,120 ACFM

STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 218 FT/SEC

STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.03	0.74	270.48	0.14
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.06	21.35	0.01
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.41	9.75	3558.91	1.78
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.34	8.19	2989.49	1.49
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.02	0.54	195.74	0.10

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU01 & EU 02 - BOILERS 1 and 2 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

TOTAL FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 8,296,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 8,125 FT^3/HR 195,009 FT^3/DAY 71,178,217 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.06	1.48	540.95	0.27
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.12	42.71	0.02
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.81	19.50	7117.82	3.56
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.68	16.38	5978.97	2.99
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.04	1.07	391.48	0.20

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU01 & EU02 - BOILERS 1 and 2 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 8,296,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 8,125 FT^3/HR 195,009 FT^3/DAY 71,178,217 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION EMISSIONS:

(PER AP-42 NATURAL GAS EMISSION FACTORS)

PARAMETERS HAPS	EMISSION FACTOR (LB/10^6 FT^3)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
2-Methylnaphthalene	2.40E-05	0.0000	0.0000	0.0017	0.00
3-Methylchloranthrene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
7,12-Dimethylbenz	< 1.60E-05	0.0000	0.0000	0.0011	0.00
Acenaphthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Acenaphthylene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Anthracene	< 2.40E-06	0.0000	0.0000	0.0002	0.00
Benz(a)anthracene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Benzene	2.10E-03	0.0000	0.0004	0.1495	0.00
Benzo(a)pyrene	< 1.20E-06	0.0000	0.0000	0.0001	0.00
Benzo(b)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Benzo(g,h,i)perylene	< 1.20E-06	0.0000	0.0000	0.0001	0.00
Benzo(k)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Butane	2.10E+00	0.0171	0.4095	149.4743	0.07
Chrysene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Dibenzo(a,h)anthracene	< 1.20E-06	0.0000	0.0000	0.0001	0.00
Dichlorobenzene	3.10E+00	0.0252	0.6045	220.6525	0.11
Ethane	2.80E-06	0.0000	0.0000	0.0002	0.00
Fluoranthene	1.80E+00	0.0146	0.3510	128.1208	0.06
Formaldehyde	6.10E-04	0.0000	0.0001	0.0434	0.00
Indeno(1,2,3-cd)pyrene	1.70E-05	0.0000	0.0000	0.0012	0.00
Pentane	1.60E+00	0.0130	0.3120	113.8851	0.06
Propane	5.00E-06	0.0000	0.0000	0.0004	0.00
Toluene	3.40E-03	0.0000	0.0007	0.2420	0.00
Total		**0.0699**	**1.6783**	**612.5735**	**0.31**

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 03 - NUT ROASTER #1 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY			2,700,000	BTU/HR	(@ 1021 BTU/FT^3)	
NATURAL GAS CONSUMPTION	505	FT^3/HR	12,122	FT^3/DAY	4,424,590	FT^3/YR
NATURAL GAS CONSUMPTION	4,100	HRS/YEAR	17	%	26.027	MCF/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) =	10.58	FT^3/FT^3		
COMBUSTION PRODUCTS (PC) =	11.73	FT^3/FT^3		
EXCESS AIR (EA) =	0.25	(OR 25%)		
STACK DIAMETER (D) =	1.00	FT	AREA (A)= 0.79	FT^2
STACK TEMPERATURE (Tf) =	120	F		

STACK FLOW RATE = 132 ACFM
STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 3 FT/SEC
STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.00	0.09	33.63	0.02
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.01	2.65	0.00
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.05	1.21	442.46	0.22
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.04	1.02	371.67	0.19
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.00	0.07	24.34	0.01

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NUT ROASTING - DEEP FAT FRYING

FACILITY: KENLAKE FOODS
SOURCE: EU 03 - Nut Roaster #1 Vegetable Oil
DATE: July 2024
JOB #: 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

NUT ROASTING CAPACITY:

MAX NUT ROASTING RATE: 5,000 LBS/HR

NUT ROAST RATES: 5,000 LBS/HR | 120,000 LBS/DAY | 21,900 TONS/YR

STACK FLOW RATE AND VELOCITY CALCULATIONS:

STACK DIAMETER (D) = 1.00 FT AREA (A)= 0.79 FT^2

STACK TEMPERATURE (Tf) = 84 F

STACK FLOW RATE = 1,200 ACFM

STACK VELOCITY = 10 FT/SEC

COMBUSTION EMISSIONS: (PER AP-42 9.13.3 SNACK CHIP DEEP FAT FRYING)

(LBS/TON NUTS ROASTED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (0.80 LB/TON NUTS ROASTED)	2.00	48.00	17520.00	8.76
VOC (0.085 LB/TON NUTS ROASTED)	0.21	5.10	1861.50	0.93

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 03 - Nut Roaster #1 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 2,700,000 BTU/HR (@ 1021 BTU/FT^3)
NATURAL GAS CONSUMPTION 2,644 FT^3/HR 63,467 FT^3/DAY 23,165,524 FT^3/YR
NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

PARAMETERS HAPS	EMISSION FACTOR (LB/10^6 FT^3)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
2-Methylnaphthalene	2.40E-05	0.0000	0.0000	0.0006	0.00
3-Methylchloranthrene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
7,12-Dimethylbenz	< 1.60E-05	0.0000	0.0000	0.0004	0.00
Acenaphthene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Acenaphthylene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Anthracene	< 2.40E-06	0.0000	0.0000	0.0001	0.00
Benz(a)anthracene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Benzene	2.10E-03	0.0000	0.0001	0.0486	0.00
Benzo(a)pyrene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Benzo(b)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Benzo(g,h,i)perylene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Benzo(k)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Butane	2.10E+00	0.0056	0.1333	48.6476	0.02
Chrysene	< 1.80E-06	0.0000	0.0000	0.0000	0.00
Dibenzo(a,h)anthracene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Dichlorobenzene	3.10E+00	0.0082	0.1967	71.8131	0.04
Ethane	2.80E-06	0.0000	0.0000	0.0001	0.00
Fluoranthene	1.80E+00	0.0048	0.1142	41.6979	0.02
Formaldehyde	6.10E-04	0.0000	0.0000	0.0141	0.00
Indeno(1,2,3-cd)pyrene	1.70E-05	0.0000	0.0000	0.0004	0.00
Pentane	1.60E+00	0.0042	0.1015	37.0648	0.02
Propane	5.00E-06	0.0000	0.0000	0.0001	0.00
Toluene	3.40E-03	0.0000	0.0002	0.0788	0.00
Total		**0.0228**	**0.5462**	**199.3670**	**0.10**

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NUT ROASTING - DEEP FAT FRYING

FACILITY: KENLAKE FOODS
SOURCE: EU 04 - Nut Roaster #1 Air Cooler
DATE: July 2024
JOB #: 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

NUT ROASTING CAPACITY:

MAX NUT ROASTING RATE: 5,000 LBS/HR

NUT ROAST RATES: 5,000 LBS/HR | 120,000 LBS/DAY | 21,900 TONS/YR

STACK FLOW RATE AND VELOCITY CALCULATIONS:

STACK DIAMETER (D) = 2.5 FT AREA (A)= 4.91 FT^2

STACK TEMPERATURE (Tf) = 75 F

STACK FLOW RATE = 10,600 ACFM

STACK VELOCITY = 36.0 FT/SEC

EMISSIONS CONTROL EQUIPMENT:

PRIMARY, AMBIENT AIR FILTER - REMOVAL EFFICIENCY 99.9 % **PM 10**
PRIMARY, AMBIENT AIR FILTER - REMOVAL EFFICIENCY 85 % **PM 2.5**

COMBUSTION EMISSIONS: (PER AP-42 9.13.3 SNACK CHIP DEEP FAT FRYING)

(LBS/TON NUTS ROASTED)	POTENTIAL UNCONTROLLED (LBS/HR)	HOURLY CONTROLLED (LBS/HR)	POTENTIAL UNCONTROLLED (LBS/DAY)	DAILY CONTROLLED (LBS/DAY)	POTENTIAL UNCONTROLLED (TPY)	ANNUAL CONTROLLED (TPY)
PARTICULATES (PM 10) (0.26 LB/TON NUTS ROASTED)	0.33	**0.0003**	7.8	**0.01**	1.42	**0.001**
PARTICULATES (PM 2.5) (0.26 LB/TON NUTS ROASTED)	0.33	**0.05**	7.8	**1.17**	1.42	**0.21**

CONTROLLED CALCULATIONS:

Hourly (lbs/hr) = $\frac{\text{Max Nut Roasting Rate (lbs/hr) X Emission Factor (lbs/ton) X (1 - Removal Efficency)}}{\text{2000 lbs/ton}}$

Daily (lbs/hr) = Hourly (lbs/hr) X 24 hrs/day

Annual (TPY) = Daily (lbs/hr) X 365 days/year / 2000 lbs/ton

Note: Per AP-42 PM10 uncontrolled emission factor is 0 lb/ton nut roasted.
AP-42 Emmision Factor based on combined exhaust flow stream. Therefore assumed 50 % of particulates emitted from roaster and 50 % from the cooler.

Assume PM10=PM2.5

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

DRY PACK CENTRAL VACUUM SYSTEM

FACILITY: KENLAKE FOODS
SOURCE: EU 05 - Dry Pack Central Vacuum
DATE: July 2024
JOB #: 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

DUST COLLECTOR HANDLING CAPACITY:

MAX DUST COLLECTION RATE: 165 LBS/HR

DUST COLLECTION RATES: 165 LBS/HR | 3,960 LBS/DAY | 723 TONS/YR

STACK FLOW RATE AND VELOCITY CALCULATIONS:

STACK DIAMETER (D) = 0.330 FT AREA (A)= 0.09 FT^2

STACK TEMPERATURE (Tf) = 75 F

STACK FLOW RATE = 600 ACFM

STACK VELOCITY = 120.0 FT/SEC

EMISSIONS CONTROL EQUIPMENT:

PRIMARY, CYCLONE - REMOVAL EFFICIENCY 75 %

SECONDARY, FILTER - REMOVAL EFFICIENCY 99.9 %

COMBUSTION EMISSIONS: (PER KDAQ 1993 EMISSION INVENTORY REPORT)

(HOURS OF OPERATION)	POTENTIAL HOURLY		POTENTIAL DAILY		POTENTIAL ANNUAL	
	UNCONTROLLED (LBS/HR)	CONTROLLED (LBS/HR)	UNCONTROLLED (LBS/DAY)	CONTROLLED (LBS/DAY)	UNCONTROLLED (TPY)	CONTROLLED (TPY)
PARTICULATES, TOTAL & PM10	165	**0.04**	3960	**0.99**	722.70	**0.18**

CALCULATIONS:

Hourly (lbs/hr) = Max Nut Roasting Rate (lbs/hr) X Emission Factor (lbs/ton) X (1 - Removal Efficiency) / 2000 lbs/ton

Daily (lbs/hr) = Hourly (lbs/hr) X 24 hrs/day

Annual (lbs/yr) = Daily (lbs/day) X 365 days/year

Annual (TPY) = Annual (lbs/yr) / 2000 lbs/ton

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 06 - HEAT EXCHANGER — *JOB #:* 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

NATURAL GAS HEAT CONTENT VALUE			1,020	BTU/FT^3		
MAX RATED HEAT INPUT CAPACITY			2,800,000	BTU/HR	(@ 1021 BTU/FT^3)	
NATURAL GAS CONSUMPTION	2,745	FT^3/HR	65,882	FT^3/DAY	24,047,059	FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) =	10.58	FT^3/FT^3		
COMBUSTION PRODUCTS (PC) =	11.73	FT^3/FT^3		
EXCESS AIR (EA) =	0.25	(OR 25%)		
STACK DIAMETER (D) =	1.67	FT	AREA (A)= 2.19	FT^2
STACK TEMPERATURE (Tf) =	950	F		

STACK FLOW RATE = 1,750 ACFM
STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 13.32 FT/SEC
STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 lbs / 10^6 FT^3)	0.02	0.50	182.76	0.09
SULFUR DIOXIDE (0.60 lbs / 10^6 FT^3)	0.00	0.04	14.43	0.01
NITROGEN OXIDES (100.0 lbs / 10^6 FT^3)	0.27	6.59	2404.71	1.20
CARBON MONOXIDE (84.0 lbs / 10^6 FT^3)	0.23	5.53	2019.95	1.01
VOLATILE ORGANIC COMPS (5.5 lbs / 10^6 FT^3)	0.02	0.36	132.26	0.07

Note: Emission Factor = AP 42 Emission Factor x Actual Heat Content Value / EPA Heat Content Value (1020 BTU/FT^3)

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: EU 06 - HEAT EXCHANGER — *JOB #:* 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

NATURAL GAS HEAT CONTENT VALUE		1,020	BTU/FT^3			
MAX RATED HEAT INPUT CAPACITY		2,800,000	BTU/HR	(@ 1021 BTU/FT^3)		
NATURAL GAS CONSUMPTION	2,745	FT^3/HR	65,882	FT^3/DAY	24,047,059	FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

PARAMETERS HAPS	EMISSION FACTOR (LB/10^6 FT^3)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
2-Methylnaphthalene	2.40E-05	0.0000	0.0000	0.0006	**0.00**
3-Methylchloranthrene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
(a)anthracene	< 1.60E-05	0.0000	0.0000	0.0004	**0.00**
Acenaphthene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Acenaphthylene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Anthracene	< 2.40E-06	0.0000	0.0000	0.0001	**0.00**
Benz(a)anthracene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Benzene	2.10E-03	0.0000	0.0001	0.0505	**0.00**
Benzo(a)pyrene	< 1.20E-06	0.0000	0.0000	0.0000	**0.00**
Benzo(b)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Benzo(g,h,i)perylene	< 1.20E-06	0.0000	0.0000	0.0000	**0.00**
Benzo(k)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Butane	2.10E+00	0.0058	0.1384	50.4988	**0.03**
Chrysene	< 1.80E-06	0.0000	0.0000	0.0000	**0.00**
Dibenzo(a,h)anthracene	< 1.20E-06	0.0000	0.0000	0.0000	**0.00**
Dichlorobenzene	3.10E+00	0.0085	0.2042	74.5459	**0.04**
Ethane	2.80E-06	0.0000	0.0000	0.0001	**0.00**
Fluoranthene	1.80E+00	0.0049	0.1186	43.2847	**0.02**
Formaldehyde	6.10E-04	0.0000	0.0000	0.0147	**0.00**
Indeno(1,2,3-cd)pyrene	1.70E-05	0.0000	0.0000	0.0004	**0.00**
Pentane	1.60E+00	0.0044	0.1054	38.4753	**0.02**
Propane	5.00E-06	0.0000	0.0000	0.0001	**0.00**
Toluene	3.40E-03	0.0000	0.0002	0.0818	**0.00**
Total		**0.0236**	**0.5670**	**206.9536**	**0.10**

Note: Emission Factor = AP 42 Emission Factor x Actual Heat Content Value / EPA Heat Content Value (1020 BTU/FT^3)

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NUT ROASTING - DEEP FAT FRYING

FACILITY: KENLAKE FOODS
SOURCE: EU 07 - Nut Roaster #2
DATE: July 2024
JOB #: 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

NUT ROASTING CAPACITY:

MAX NUT ROASTING RATE: 7,500 LBS/HR

NUT ROAST RATES: 7,500 LBS/HR | 180,000 LBS/DAY | 32,850 TONS/YR

STACK FLOW RATE AND VELOCITY CALCULATIONS:

STACK DIAMETER (D) = 1.33 FT AREA (A)= 1.39 FT^2

STACK TEMPERATURE (Tf) = 260 F

STACK FLOW RATE = 1,250 ACFM

STACK VELOCITY = 15 FT/SEC

EMISSIONS CONTROL EQUIPMENT:

PRIMARY, DE-MISTER - REMOVAL EFFICIENCY 99.9 % **PM 10**
PRIMARY, DE-MISTER - REMOVAL EFFICIENCY 85 % **PM 2.5**

COMBUSTION EMISSIONS: (PER AP-42 9.13.3 SNACK CHIP DEEP FAT FRYING)

(LBS/TON NUTS ROASTED)	POTENTIAL HOURLY (LBS/HR)		POTENTIAL DAILY (LBS/DAY)		POTENTIAL ANNUAL (TPY)	
	UNCONTROLLED	CONTROLLED	UNCONTROLLED	CONTROLLED	UNCONTROLLED	CONTROLLED
PARTICULATES (PM 10) (0.26 LB/TON NUTS ROASTED)	0.49	**0.0005**	11.70	**0.01**	2.14	**0.002**
PARTICULATES (PM 2.5) (0.26 LB/TON NUTS ROASTED)	0.49	**0.07**	11.70	**1.76**	2.14	**0.32**
VOC (0.085 LB/TON NUTS ROASTED)	0.32	**0.32**	7.65	**7.65**	1.40	**1.40**

CONTROLLED CALCULATIONS:

Hourly (lbs/hr) = $\frac{\text{Max Nut Roasting Rate (lbs/hr) X Emission Factor (lbs/ton) X (1 - Removal Efficency)}}{\text{2000 lbs/ton}}$

Daily (lbs/hr) = Hourly (lbs/hr) X 24 hrs/day

Annual (TPY) = Daily (lbs/hr) X 365 days/year / 2000 lbs/ton

Note: Per AP-42 PM10 uncontrolled emission factor is 0 lb/ton nut roasted.
AP-42 Emmision Factor based on combined exhaust flow stream. Therefore assumed 50 % of particulates emitted from roaster and 50 % from the cooler.

Assume PM10=PM2.5

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NUT ROASTING - DEEP FAT FRYING

FACILITY: KENLAKE FOODS
SOURCE: EU 08 - Nut Roaster #2 Air Cooler
DATE: July 2024
JOB #: 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

NUT ROASTING CAPACITY:

MAX NUT ROASTING RATE: 7,500 LBS/HR

NUT ROAST RATES: 7,500 LBS/HR | 180,000 LBS/DAY | 32,850 TONS/YR

STACK FLOW RATE AND VELOCITY CALCULATIONS:

STACK DIAMETER (D) = 2.500 FT AREA (A)= 4.91 FT^2

STACK TEMPERATURE (Tf) = 120 F

STACK FLOW RATE = 21,568 ACFM

STACK VELOCITY = 73.3 FT/SEC

EMISSIONS CONTROL EQUIPMENT:

PRIMARY, AMBIENT AIR FILTER - REMOVAL EFFICIENCY 99.9 % **PM 10**

PRIMARY, AMBIENT AIR FILTER - REMOVAL EFFICIENCY 85 % **PM 2.5**

COMBUSTION EMISSIONS: (PER AP-42 9.13.3 SNACK CHIP DEEP FAT FRYING)

(LBS/TON NUTS ROASTED)	POTENTIAL UNCONTROLLED (LBS/HR)	HOURLY CONTROLLED (LBS/HR)	POTENTIAL UNCONTROLLED (LBS/DAY)	DAILY CONTROLLED (LBS/DAY)	POTENTIAL UNCONTROLLED (TPY)	ANNUAL CONTROLLED (TPY)
PARTICULATES (PM 10) (0.26 LB/TON NUTS ROASTED)	0.49	**0.0005**	11.7	**0.01**	2.14	**0.002**
PARTICULATES (PM 2.5) (0.26 LB/TON NUTS ROASTED)	0.49	**0.07**	11.7	**1.76**	2.14	**0.32**

CONTROLLED CALCULATIONS:

Hourly (lbs/hr) = $\frac{\text{Max Nut Roasting Rate (lbs/hr) X Emission Factor (lbs/ton) X (1 - Removal Efficency)}}{\text{2000 lbs/ton}}$

Daily (lbs/hr) = Hourly (lbs/hr) X 24 hrs/day

Annual (TPY) = Daily (lbs/hr) X 365 days/year / 2000 lbs/ton

Note: Per AP-42 PM10 uncontrolled emission factor is 0 lb/ton nut roasted.
AP-42 Emmision Factor based on combined exhaust flow stream. Therefore assumed 50 % of particulates emitted from roaster and 50 % from the cooler.

Assume PM10=PM2.5

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: MECHANICAL ROOM MAKE-UP AIR — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 1,720,600 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 1,685 FT^3/HR 40,445 FT^3/DAY 14,762,445 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) = 10.58 FT^3/FT^3

COMBUSTION PRODUCTS (PC) = 11.73 FT^3/FT^3

EXCESS AIR (EA) = 0.25 (OR 25%)

STACK DIAMETER (D) = 3.30 FT AREA (A)= 8.55 FT^2

STACK TEMPERATURE (Tf) = 94 F

STACK FLOW RATE = 422 ACFM

STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 1 FT/SEC

STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.01	0.31	112.19	0.06
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.02	8.86	0.00
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.17	4.04	1476.24	0.74
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.14	3.40	1240.05	0.62
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.01	0.22	81.19	0.04

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: CLAMSHELL LINE MAKE-UP AIR — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY			1,103,000	BTU/HR	(@ 1021 BTU/FT^3)	
PACKAGING ROOM RTU (Max Input)			810,000	BTU/HR	(@ 1021 BTU/FT^3)	
FILLING ROOM RTU (Max Input)			293,000	BTU/HR	(@ 1021 BTU/FT^3)	
NATURAL GAS CONSUMPTION	1,080	FT^3/HR	25,928	FT^3/DAY	9,463,546	FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) =	10.58	FT^3/FT^3		
COMBUSTION PRODUCTS (PC) =	11.73	FT^3/FT^3		
EXCESS AIR (EA) =	0.25	(OR 25%)		
STACK DIAMETER (D) =	1.13	FT	AREA (A)=	1.00 FT^2
STACK TEMPERATURE (Tf) =	128	F		

STACK FLOW RATE = 287 ACFM
STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 5 FT/SEC
STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.01	0.20	71.92	0.04
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.02	5.68	0.00
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.11	2.59	946.35	0.47
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.09	2.18	794.94	0.40
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.01	0.14	52.05	0.03

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: WATER HEATERS 1 & 2 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 1,200,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 1,175 FT^3/HR 28,208 FT^3/DAY 10,295,788 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) = 10.58 FT^3/FT^3

COMBUSTION PRODUCTS (PC) = 11.73 FT^3/FT^3

EXCESS AIR (EA) = 0.25 (OR 25%)

STACK DIAMETER (D) = 1.33 FT AREA (A)= 1.39 FT^2

STACK TEMPERATURE (Tf) = 93 F

STACK FLOW RATE = 294 ACFM

STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 4 FT/SEC

STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS:

(PER AP-42 NATURAL GAS EMISSION FACTORS)
(Low Nox)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.01	0.21	78.25	0.04
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.02	6.18	0.00
NITROGEN OXIDES (50 LBS/10^6 FT^3 GAS)	0.06	1.41	514.79	0.26
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.10	2.37	864.85	0.43
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.01	0.16	56.63	0.03

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: WATER HEATER #3 — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 275,000 BTU/HR (@ 1021 BTU/FT^3)

NATURAL GAS CONSUMPTION 269 FT^3/HR 6,464 FT^3/DAY 2,359,452 FT^3/YR

NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) = 10.58 FT^3/FT^3

COMBUSTION PRODUCTS (PC) = 11.73 FT^3/FT^3

EXCESS AIR (EA) = 0.25 (OR 25%)

STACK DIAMETER (D) = 0.83 FT AREA (A)= 0.54 FT^2

STACK TEMPERATURE (Tf) = 93 F

STACK FLOW RATE = 67 ACFM

STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 2 FT/SEC

STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (7.6 LBS/10^6 FT^3 GAS)	0.00	0.05	17.93	0.01
SULFUR DIOXIDE (0.6 LBS/10^6 FT^3 GAS)	0.00	0.00	1.42	0.00
NITROGEN OXIDES (100 LBS/10^6 FT^3 GAS)	0.03	0.65	235.95	0.12
CARBON MONOXIDE (84 LBS/10^6 FT^3 GAS)	0.02	0.54	198.19	0.10
VOLATILE ORGANIC COMPS (5.5 LBS/10^6 FT^3 GAS)	0.00	0.04	12.98	0.01

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: KENLAKE FOODS — *DATE:* July 2024
SOURCE: Insignificant Activites — *JOB #:* 11225
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

MAX RATED HEAT INPUT CAPACITY 4,298,600 BTU/HR (@ 1021 BTU/FT^3)
NATURAL GAS CONSUMPTION 4,210 FT^3/HR 101,044 FT^3/DAY 36,881,230 FT^3/YR
NOTE: NATURAL GAS IS PRIMARY FUEL.

COMBUSTION EMISSIONS: (PER AP-42 NATURAL GAS EMISSION FACTORS)

PARAMETERS HAPS	EMISSION FACTOR (LB/10^6 FT^3)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
2-Methylnaphthalene	2.40E-05	0.0000	0.0000	0.0009	0.00
3-Methylchloranthrene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
7,12-Dimethylbenz	< 1.60E-05	0.0000	0.0000	0.0006	0.00
Acenaphthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Acenaphthylene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Anthracene	< 2.40E-06	0.0000	0.0000	0.0001	0.00
Benz(a)anthracene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Benzene	2.10E-03	0.0000	0.0002	0.0775	0.00
Benzo(a)pyrene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Benzo(b)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Benzo(g,h,i)perylene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Benzo(k)fluoranthene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Butane	2.10E+00	0.0088	0.2122	77.4506	0.04
Chrysene	< 1.80E-06	0.0000	0.0000	0.0001	0.00
Dibenzo(a,h)anthracene	< 1.20E-06	0.0000	0.0000	0.0000	0.00
Dichlorobenzene	3.10E+00	0.0131	0.3132	114.3318	0.06
Ethane	2.80E-06	0.0000	0.0000	0.0001	0.00
Fluoranthene	1.80E+00	0.0076	0.1819	66.3862	0.03
Formaldehyde	6.10E-04	0.0000	0.0001	0.0225	0.00
Indeno(1,2,3-cd)pyrene	1.70E-05	0.0000	0.0000	0.0006	0.00
Pentane	1.60E+00	0.0067	0.1617	59.0100	0.03
Propane	5.00E-06	0.0000	0.0000	0.0002	0.00
Toluene	3.40E-03	0.0000	0.0003	0.1254	0.00
Total		**0.0362**	**0.8696**	**317.4070**	**0.16**

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

BULK SUGAR RECEIVING SYSTEM

FACILITY:	KENLAKE FOODS	*DATE:*	July 2024
SOURCE:	BULK SUGAR RECEIVING	*JOB #:*	11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS?			POTENTIAL

MATERIAL AND SYSTEM DATA

MATERIAL: BULK SUGAR RECEIVING

PARTICLE SIZE: 200 MICRONS AVERAGE

MAXIMUM RECEIVING CAPACITY: 30,000 LBS/HR

UNLOADING ENCLOSED? YES

TOTAL SUGAR RECEIVING PER YEAR (POTENTIAL): 262,800,000 LBS/YR

OPERATING EFFICIENCY OF "IN PROCESS" FILTERS: 99.9 %

EMISSION FACTOR (% OF HANDLING CAPACITY): 3.50 %

NOTE: AP-42 FLOUR MILLING EMISSION FACTOR = 3.5% (40 MICRON PARTICLES AVERAGE)

EMISSION CALCULATIONS (MAXIMUM)

RECEIVING SYSTEM

ANNUAL: 262,800,000 LBS/YR X 3.50 % X 0.1 % = 9,198 LBS/YR PM MAX
4.60 TPY PM MAX

SOURCE TOTALS

HOURLY: 1.05 LBS/HR PM MAX

DAILY: 25.20 LBS/DAY PM MAX

ANNUAL: 4.60 TPY PM MAX

ALL EMISSIONS FROM UNLOADING ARE VENTED INSIDE THE FACILITY. TRUCKS UNLOADING CONNECTION IS OUTSIDE, BUT ALL RECEIVING EQUIPMENT IS INSIDE AND VENTED INSIDE THE FACILITY.

NOTE: RAIL CAR UNLOADING NO LONGER CONDUCTED AND ALL ASSOCIATED EQUIPMENT REMOVED.

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

SUGAR TRANSFER SYSTEM

FACILITY:	KENLAKE FOODS	*DATE:*	July 2024
SOURCE:	SUGAR TRANSFER SYSTEM	*JOB #:*	11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS?			POTENTIAL

MATERIAL AND SYSTEM DATA

MATERIAL: SUGAR TRANSFER

PARTICLE SIZE: 200 MICRONS AVERAGE

MAXIMUM RECEIVING CAPACITY: 12,000 LBS/HR

UNLOADING ENCLOSED? YES

TOTAL SUGAR RECEIVING PER YEAR (POTENTIAL): 105,120,000 LBS/YR

OPERATING EFFICIENCY OF "IN PROCESS" FILTERS: 99.9 %

EMISSION FACTOR (% OF HANDLING CAPACITY): 3.50 %

NOTE: AP-42 FLOUR MILLING EMISSION FACTOR = 3.5% (40 MICRON PARTICLES AVERAGE)

EMISSION CALCULATIONS (MAXIMUM)

RECEIVING SYSTEM

ANNUAL: 105,120,000 LBS/YR X 3.50 % X 0.1 % = 3,679 LBS/YR PM MAX
1.84 TPY PM MAX

SOURCE TOTALS

HOURLY: 0.42 LBS/HR PM MAX

DAILY: 10.08 LBS/DAY PM MAX

ANNUAL: 1.84 TPY PM MAX

INPUT
CALCULATION

HIXSON
CINCINNATI, OH (513) 241-1230

NATURAL GAS COMBUSTION EMISSIONS (< 100 MMBTU/HR)

FACILITY: Kenlake Foods — *DATE:* July 2024
SOURCE: IC Engine (Natural Gas) — *JOB #:* 11225.00
CALCULATE "ACTUAL" OR "POTENTIAL" EMISSIONS? POTENTIAL

(NOTE: POTENTIAL EMISSIONS CALCULATED AUTOMATICALLY BY ENTERING RATED BTU/HR CAPACITY.)
FOR ACTUAL EMISSIONS, ENTER ACTUAL / ESTIMATED FUEL USAGES

FUEL CONSUMPTION DATA (FOR EMISSIONS CALCULATIONS):

NATURAL GAS HEAT CONTENT VALUE			1020	BTU/FT^3		
MAX RATED HEAT INPUT CAPACITY			195,840	BTU/HR		
NATURAL GAS CONSUMPTION	192	FT^3/HR	2,880	FT^3/DAY	2,880	FT^3/YR
NOTE: NATURAL GAS IS PRIMARY FUEL.			15 hours per day		15 hours per year	

COMBUSTION DATA (FOR STACK FLOW RATE AND VELOCITY CALCULATIONS):

COMBUSTION RATIO (CR) =	10.58	FT^3/FT^3		
COMBUSTION PRODUCTS (PC) =	11.73	FT^3/FT^3		
EXCESS AIR (EA) =	0.25	(OR 25%)		
STACK DIAMETER (D) =	0.25	FT	AREA (A)= 0.05	FT^2
STACK TEMPERATURE (Tf) =	356	F		

STACK FLOW RATE = 71 ACFM
STACK FLOW RATE (ACFM) = ((GC (GAL/HR) / 60) * (PC + (CR * EA))) * ((460 + Tf) / 530)

STACK VELOCITY = 24.06 FT/SEC
STACK VELOCITY (FT/SEC) = ((STACK FLOWRATE (ACFM)) / (A (FT^2))) / (60 SEC/MIN)

COMBUSTION EMISSIONS:

(PER AP-42 NATURAL GAS EMISSION FACTORS-Table 3.2-2)
(4 STROKE LEAN BURN)

(LBS/10^6 FT^3 GAS USED)	POTENTIAL HOURLY (LBS/HR)	POTENTIAL DAILY (LBS/DAY)	POTENTIAL ANNUAL (LBS/YR)	(TPY)
PARTICULATES (10.19 lbs / 10^6 FT^3)	0.00	0.03	0.03	0.000
SULFUR DIOXIDE (0.60 lbs / 10^6 FT^3)	0.00	0.00	0.00	0.000
NITROGEN OXIDES (4161.60 lbs / 10^6 FT^3)	0.80	11.99	11.99	0.006
CARBON MONOXIDE (568.1 lbs / 10^6 FT^3)	0.11	1.64	1.64	0.001
VOLATILE ORGANIC COMPS (120.4 lbs / 10^6 FT^3)	0.02	0.35	0.35	0.000

Note: Emission Factor = AP 42 Emission Factor x Actual Heat Content Value