

COMBO PERMIT SUMMARY REPORT

Company Name: Koch Foods LLC File Number: 32-0215 EPS Initials: MAO
Permit Number(s): 081059 Source Point Number(s): 01
Application Received (date): January 25, 2023 Application Complete (date): January 25, 2023
Air Quality Analysis Performed? Yes ☐ No ☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

Operating Permit Renewal

Koch Foods LLC (Koch Foods of Morristown, LLC) is seeking to renew their operating permit for their two natural gas fired boilers with #2 fuel oil back up (source 01). This combo permit is to renew the operating permit, to convert to the new permit shell, to review emission calculations, and to include NOx, VOC, and CO as emitted pollutants which were not included in the original permit.

Permit Background Information:

Koch foods currently only has one permit on site: an operating permit for two natural gas fired boilers with #2 fuel oil as backup.

The previous permit (067466F) included specific limitations for SO₂ and PM. The method of calculating SO₂ is included in the emission estimation section and the new permit as well (081059). The method of obtaining the PM limitation was not explained. The previous permit also had no limitations for VOCs, NOx and CO emissions.

On February 22, 2018, the facility submitted an application for a permit amendment to modify the record keeping requirements from daily to monthly.

On March 20, 2023, correspondence was sent to the facility, notifying them that this permit was intentionally backlogged due to staffing shortages.

On August 8, 2023, the permit was removed from the intentional backlog and assigned to MAO.

On October 5, 2023, the permit writer requested additional information from the site regarding potential additional sources on site. This inquiry was prompted by a phone call between the permit writer and the responsible person.

On November 10, 2023, the facility submitted a letter dated November 9, 2023, responding to the inquiry which outlined additional sources on site. This letter included a statement claiming all additional sources to be insignificant. The permit writer requested calculations to be submitted with the letter.

On December 15, 2023, the facility submitted a letter which included detailed calculations for each additional source mentioned in the letter dated November 9, 2023.

On December 18, 2023, the permit writer requested clarification on the letter, and on January 3, 2024, the permit writer requested additional information regarding the intervention source. A revised letter was submitted December 21, 2023, which included missing table notes.

On January 4, 2024, the facility submitted additional information to the permit writer. The writer forwarded this submittal to admin on January 8, 2024. Extended internal discussion with compliance validation proceeded regarding calculations presented by the facility for source 04.

On March 04, 2024, compliance validation gave a final determination allowing for the use of emission factors for intervention to be used from Hillshire farms.

Process Information

Koch Foods LLC is a poultry slaughtering and processing plant with multiple sites in the United States including one in Morristown, TN.

As part of their operation, the only air contaminant source present is:

- Source 1 – One 21 MMBtu/hr Natural Gas-Fired Boiler with #2 Fuel Oil Backup and One 10.5 MMBtu/hr Natural Gas-Fired Boiler with #2 Fuel Oil Backup

Federal Requirements

This facility is subject to standards under 40 CFR 60. The heat input design rate and manufacturer date (after June 9, 1989) of the natural gas-fired boiler (source 01) exceeds the 10.0 MMBtu/hr. threshold identified in 40 CFR part 60, subpart Dc – *Standards of Performance for New Stationary Sources, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*. The applicable requirements of 40 CFR part 60, subpart Dc are incorporated into the construction permit pursuant to Tennessee Air Pollution Control Regulations (TAPCR) 1200-03-09-.03(8).

Additional State Requirements

At the time of the permit application and permit issuance, the boilers (source 01) at this facility were subject to Chapters 6 and 14; but were not subject to any source specific requirements included in Chapters 18, 27, 31, etc. of the TAPCR.

Based on the Division's low nitrogen oxide (NOx) requirement guidance document, if the potential emissions is increased for an existing source which emits NOx, then low NOx must be addressed. The boiler (source 01) is not subject to the Division's low NOx requirement, as it was installed prior to the implementation of the policy and no physical modifications are being made to the boiler that would increase emissions.

Anticipated Emissions

Anticipated emissions from the facility's processes consists primarily of the products of combustion [particulate matter (PM), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxide (NOx), and VOCs].

This facility is classified as an area source of hazardous air pollutants (HAPs) and is in an *attainment* area for all pollutants. This facility is not identified as one of the 28 named source categories with a 100 ton per year (tpy) threshold for New Source Review (NSR).

The facility will remain a true minor facility.

Emission Estimation

For source 01, emissions were estimated using the heat input rate of each unit or fuel burning installation and the emission factors found in Tables 1.4-1 and 1.4-2 from Chapter 1.4: Natural Gas Combustion of AP-42. The following formula was utilized in calculating combustion emissions:

$$\text{Pollutant} \left(\frac{\text{lb}}{\text{hr}} \right) = \left[\text{Heat Input Rate} \left(\frac{\text{MMBtu}}{\text{hr}} \right) \right] \times \left[\frac{\text{Emission Factor} \left(\frac{\text{lbs}}{10^6 \text{ scf}} \right)}{1020 \frac{\text{Btu}}{\text{ft}^3}} \right]$$

Emissions for the combustion of #2 fuel oil were estimated using the heat input rate of each unit or fuel burning installation and the emission factors found in Tables 1.3-1 and 1.3-2 from Chapter 1.3: Fuel Oil Combustion of AP-42. The following formula was utilized in calculating combustion emissions:

$$Pollutant \left(\frac{lb}{hr} \right) = \left[Heat \ Input \ Rate \left(\frac{MMBtu}{hr} \right) \right] \times \left[\frac{Emission \ Factor \left(\frac{lbs}{10^3 \ gal} \right)}{140 \frac{MMBtu}{10^3 \ gal}} \right]$$

Rules Analysis

Title V ☐ Cond. Major ☐ Minor ☒ Source category listed in 1200-03-09-.01(4)(b)1.(i)? Yes ☐ No ☒

Reason for PSD: New source above ____ TPY ☐ Sig. increase in ____ emissions ☐ N/A ☒

Applicable NSPS: 40 CFR Part 60, Subpart Dc ☒ State Rule 1200-03-16-. ☐ N/A ☒

Applicable NESHAP: 40 CFR Part 61, Subpart ☐ State Rule 1200-03-11-. ☐ N/A ☒

Applicable NESHAP: 40 CFR Part 63, Subpart ☐ State Rule 1200-03-31-. ☐ N/A ☒

Other Applicable State Rules

PM Emissions: 1200-03- 06 -. 01(7) ☒ N/A ☐ NO_x Emissions: 1200-03- 06 -. 03(2) ☒ N/A ☐

SO₂ Emissions: 1200-03- 14 -. 01(3) ☒ N/A ☐ Lead Emissions: 1200-03- -. ☐ N/A ☒

CO Emissions: 1200-03- 06 -. 03(2) ☒ N/A ☐ Emissions: 1200-03- -. ☐ N/A ☒

VOC Emissions: 1200-03- 06 -. 03(2) ☒ N/A ☐ Emissions: 1200-03- -. ☐ N/A ☒

Visible Emissions from Facility not to exceed 20 % opacity per Method 9 (Rule 1200-03- 05 -. 01(1))

Visible Emissions from roads and parking areas not to exceed 10 % opacity per Method 9 (Rule 1200-03- 08 -. 01(3))

Comments: *

Emission Summary

Facility ID: 32-0215

Permit Number: 081059

Source Status: New ☐ Modification ☐ Expansion ☐ Relocation ☐

Permit Status: New ☐ Renewal ☒

PSD ☐ NSPS ☒ NESHAPs ☐

Previous Permit Number: Construction N/A

Operating 067466F

Pollutant	Pounds/Hour			Tons/Year			Net Change	Date of Data	*	Applicable Standard(s) TAPCR
	Actual	Potential	Allowable	¹ Actual	² Potential	Allowable				
Source 01: Fuel Burning Installation: 21 MMBtu/hr. Natural Gas Fired Boiler with #2 Fuel Oil Back up & 10.5 MMBtu/hr Natural Gas Fired Boiler with #2 Fuel Oil Back up										
PM	0.23	0.23	0.75	1.03	1.03	--	0	3/6/2023		1200-03-06-.01(7)
SO ₂	0.02	0.02	0.05	0.08	0.08	--	0	3/6/2023		1200-03-14-.01(3)
CO	2.59	2.59	--	11.36	11.36	11.36	+11.36	9/6/2023		1200-03-06-.03(2)
VOC	0.017	0.017	--	0.74	0.74	0.74	+0.74	9/6/2023		1200-03-06-.03(2)
NO _x	4.50	4.50	--	19.71	19.71	19.71	+19.71	9/6/2023		1200-03-06-.03(2)

¹ Actual emissions for source 01 are based on 8,760 hrs./yr.

² Potential emissions are based on uncontrolled emissions at 8,760 hrs./yr.

³Facility-Wide Totals						
Pollutant	Pounds/Hour			Tons/Year		
	Actual	Potential	⁵ Allowable	⁴ Actual	⁵ Potential	⁵ Allowable
PM	0.33	0.33	0.75	5.94	5.94	--
SO ₂	0.02	0.02	0.05	0.09	0.09	--
CO	2.81	2.81	--	12.32	12.32	11.36
VOC	0.51	0.51	--	7.06	7.06	0.74
NO _x	4.76	4.76	--	20.85	20.85	19.71

⁴ Emissions include those from sources labeled insignificant or exempt.

⁵ Allowable emissions only include those from permitted sources.

PERMITTING ENGINEER: MAO

DATE: March 18, 2024

PERMIT ISSUED: March 25, 2024

PERMIT EXPIRATION DATE: May 01, 2033