



REGION 5

CHICAGO, IL 60604

VIA ELECTRONIC MAIL
DELIVERY RECEIPT REQUESTED

Dan Miller, Vice President
Kikkoman Foods, Inc.
N1365 Six Corners Road
Walworth, Wisconsin
dmiller@kikkoman.com

Re: Notice of Violation
Kikkoman Foods, Inc.
Walworth, Wisconsin

Dear Dan Miller:

The U.S. Environmental Protection Agency is issuing the enclosed Notice of Violation (NOV) to Kikkoman Foods, Inc. (Kikkoman or you) under Section 113(a)(1) of the Clean Air Act, 42 U.S.C. § 7413(a)(1). EPA finds that Kikkoman is violating the Wisconsin State Implementation Plan at your Walworth, Wisconsin facility.

Section 113 of the Clean Air Act gives EPA several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the NOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the NOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference. The EPA contacts in this matter are Dakota Prentice and Brianna Fenzl. You may call them at (312) 886-6761 or (312) 886-1960, respectively, or email at prentice.dakota@epa.gov or fenzl.brianna@epa.gov to request a conference. You should make the request within 10 calendar days following receipt of this letter.

We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

Frank,
Nathan

 Digitally signed by Frank,
Nathan
Date: 2025.05.23
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Nathan Frank
Section Supervisor
Air Enforcement and Compliance Assurance Section (IL/IN)
U.S. EPA Region 5 Enforcement and Compliance Assurance Division

cc: Maria Hill, Chief
Compliance, Enforcement, and Emission Inventory Section
Air Management Program
Environmental Protection Division
Wisconsin Department of Natural Resources

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

IN THE MATTER OF:

Kikkoman Foods, Inc.

Walworth, Wisconsin

Proceedings Pursuant to

Section 113(a)(1) of the

Clean Air Act, 42 U.S.C. § 7413(a)(1)

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NOTICE OF VIOLATION

EPA-5-25-WI-2

NOTICE OF VIOLATION

The U.S. Environmental Protection Agency (EPA) is issuing this Notice of Violation under Section 113(a)(1) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a)(1). EPA finds that Kikkoman Foods, Inc. (Kikkoman) is violating the Wisconsin State Implementation Plan (SIP), as follows:

Statutory and Regulatory Background

1. The Clean Air Act, 42 U.S.C. §§ 7401, *et seq.*, and the regulations promulgated thereunder, establish a statutory and regulatory scheme designed to protect and enhance the quality of the nation's air to promote the public health and welfare and the productive capacity of its population.

Wisconsin SIP

2. Section 110 of the CAA, 42 U.S.C. § 7410, requires each state to adopt and submit to EPA a plan that provides for the implementation, maintenance, and enforcement of primary and secondary National Ambient Air Quality Standards (NAAQS) in the state. Upon approval by EPA, the plan becomes a part of the applicable State Implementation Plan (SIP) for the state.
3. On January 18, 1995, EPA approved NR 400, "Air Pollution Control Definitions," as part of the federally enforceable Wisconsin SIP. See 60 Fed. Reg. 3538 (Jan. 18, 1995). Since then, EPA has approved several revisions of NR 400 as part of the federally enforceable Wisconsin SIP. See 66 Fed. Reg. 56931 (Nov. 13, 2001); 71 Fed. Reg. 5979 (Feb 6, 2006); 77 Fed. Reg. 46973 (Aug. 7, 2012); 78 Fed. Reg. 30208 (May 22, 2013); 79 Fed. Reg. 62008 (Oct. 16, 2014); 87 Fed. Reg. 11957 (Mar. 3, 2022).
4. NR 400.02(128) defines "Process line" as one or more actions or unit operations which must function simultaneously or in sequence in order to manufacture or modify a product.
5. NR 400.02(162) defines "Volatile organic compound" or "VOC" as "any organic compound which participates in atmospheric photochemical reactions."
6. On April 27, 1995, EPA approved Wisconsin Administrative Code of Natural Resources (NR) 424.03 as part of the federally enforceable SIP for Wisconsin. See 60 Fed. Reg. 20643 (Apr.

27, 1995). EPA approved administrative amendments to NR 424.03 on May 27, 1999. See 64 Fed. Reg. 28745 (May 27, 1999).

7. NR 424.03 applies to all process lines that emit organic compounds, solvents or mixtures, except for the process lines listed in NR 424.03(1).
8. Pursuant to NR 424.03(1)(a)4, a process line is exempt from the requirements of NR 424.03 if it never emits more than 15 pounds of volatile organic compounds in any day.
9. Under s. NR 424.03(2), process lines which emit greater than 15 pounds in a day (lbs/day) of organic compounds, solvents, or mixtures shall meet the following emission limitations:
 - a. Process lines on which construction or modification commenced before August 1, 1979, shall control emissions of photochemically reactive organic compounds by 85%;
 - b. Process lines on which construction or modification commenced on or after August 1, 1979, and which are not subject to emission limitations listed elsewhere in chs. NR 419 to 423 shall control volatile organic compound emissions by at least 85%;
 - c. Where 85% control as required under either par. (a) or (b) has been demonstrated to be technologically infeasible for a specific process line, the owner or operator shall use the latest available control techniques and operating practices demonstrating best current technology (LACT)), as approved by the department.

Wisconsin Federally Enforceable State Operating Permit Program

10. On April 27, 1995, EPA approved Wisconsin State Statutes 285.01(36) and 285.60(2) as NR 144.30(22rm) and NR 144.391(2), respectively, as part of the federally enforceable SIP for Wisconsin. See 60 Fed. Reg. 3538 (January 18, 1995).
11. NR 144.30(22rm) defines "regulated pollutant" as including, "a volatile organic compound" or VOC.
12. NR 144.391(2)(b) states in part, "no person may operate an existing source...unless the person has an operation permit from the department."
13. On January 18, 1995, EPA granted Wisconsin full approval of its federally enforceable state operating permit (FESOP) program. See 60 Fed. Reg. 3538. Wisconsin's FESOP program regulations are codified at Wisconsin Administrative Code NR 407.
14. NR 407.02(4) defines "major source" as, "A stationary source that directly emits, or has the potential to emit, 100 tpy or more of any air contaminant subject to regulation under the Act [Clean Air Act] other than particulate matter."

Relevant Factual Background

15. Kikkoman owns and operates a soy sauce production facility at N1365 Six Corners Road in Walworth, Wisconsin (the Facility).
16. The Facility's production process involves various process steps including the production of Shoyu Koji¹ at Koji Beds and the aging of Moromi² in fermentation tanks³.
17. The Facility has a total of 10 Koji Beds and 526 fermentation tanks.
18. The Facility currently operates under Type B Registration Operation Permit (ROP-B) Coverage No. 265007050-ROPB, issued on August 10, 2017.
19. Facility-wide emissions of volatile organic compounds (VOCs) must not exceed 50% of the major source threshold, or 50 tons per year (tpy), set forth in s. NR 407.02(4) to qualify for an ROP-B permit.
20. On February 5, 2024, EPA conducted an inspection of the Facility to evaluate compliance with the CAA (the Inspection).
21. On August 27, 2024, EPA issued an information request pursuant to Section 114 of the CAA, 42 U.S.C. § 7414, to Kikkoman (Information Request).

Fermentation Emission Factor

22. During the Inspection, EPA requested limited additional information regarding Facility operations. This request included past performance testing used to establish emission factors at the Facility.
23. Kikkoman provided EPA with a copy of a performance test report for testing conducted at fermentation tanks in 2004 (2004 Performance Test).
24. The 2004 Performance Test used EPA Reference Method 25A (M25A) with propane as the calibration gas to determine emission factors for VOCs in units "as carbon" for the various stages of fermentation.
25. Kikkoman also provided EPA with a letter, dated October 21, 2004, documenting the calculation of the VOC emission factor used at the fermentation process (Process P07 - Fermentation). The emission factor calculation correctly converts from units "as carbon" to "as ethanol" based on molecular weights, but fails to adjust for a response factor of the M25A testing equipment.

¹ Shoyu Koji is produced by mixing Kikkoman Aspergillus with steamed soybeans and roasted crushed wheat.

² Moromi is produced by mixing the Shoyu Koji with brine.

³ Kikkoman refers to fermentation tanks as "Shikomi" tanks.

26. A response factor is used to adjust testing data to account for the sensitivity of the equipment to the compound present, in this case, ethanol. A common response factor for ethanol using M25A is 0.7, which means that only 70% of the ethanol present during testing was capable of being detected.
27. Kikkoman's VOC emission factor for Process P07 - Fermentation should be adjusted to account for a response factor of 0.7, because the M25A testing equipment is capable of detecting only 70% of ethanol present in emissions from the Process P07 - Fermentation process.

Koji Bed Testing

28. The Information Request required Kikkoman to provide various records and conduct limited testing at a Koji Bed at the Facility.
29. Kikkoman conducted VOC emissions testing, including testing for ethanol, at the outlet of one Koji bed on December 4, 2024 and December 5, 2024 (Koji Test).
30. The Koji Test identified an ethanol emission rate of 0.167 tpy per Koji Bed or a combined 1.67 tpy from all 10 Koji Beds.
31. Kikkoman has not identified the Koji Beds previously as emission sources, and the VOC emissions from the Koji Beds have not been included in annual air emission inventory summary reports submitted by Kikkoman to the Wisconsin Department of Natural Resources (WDNR.)

VOC Annual Emissions

32. When using a VOC emission factor adjusted for the response factor for calculating Process P07 – Fermentation emissions, in addition to VOC emissions from the Koji Beds, the actual annual facility-wide VOC emissions exceeded 50 tpy from 2022 to 2024.
33. Kikkoman exceeded the 50% of the major source threshold for VOCs and was not eligible for an ROP-B permit from 2022 to 2024.
34. Since at least 2022, Kikkoman failed to obtain a FESOP when it was not eligible to operate under an ROP-B permit.

Fermentation Process

35. WDNR issued a memorandum dated July 13, 2017, entitled "Review of Revocability for Kikkoman Food's Air Permits to Establish ROPB Eligibility" (ROPB Memo). The information in the ROPB Memo documents WDNR's understanding of Kikkoman's operations.

36. The ROPB states that “[t]he production process includes puffing raw materials, culturing, mash fermentation, aging, pressing, refining, pasteurization, and bottle filling,” and identifies the emission unit associated with all of the “Fermentation” tanks at the facility combined as a single emission unit named “Process P07, Stack S07.” Therefore, the ROPB Memo classifies all the fermentation tanks at the facility collectively as a single process line, “Fermentation,” with a single emission unit identified as “Process P07, Stack S07.”
37. The ROPB Memo includes the following statement, “The facility will comply with NR 424.03(2) for the fermentation lines and bottling lines by limiting emissions to less than 10 tons/year per process line.”
38. Kikkoman provided additional information regarding its process lines to EPA in a letter dated February 27, 2025 (2025 Letter).
39. The 2025 Letter states that Kikkoman considers each fermentation tank to be a separate process line.
40. Kikkoman incorrectly classified each fermentation tank as a separate process line. This classification is inconsistent with WDNR’s ROPB Memo and the application of process line requirements from the Wisconsin SIP.
41. Annual VOC emissions from Process P07, Stack S07 – Fermentation have exceeded 10 tpy from at least 2020 through 2024.

Violations

42. Kikkoman has violated and currently is violating Wisconsin SIP rule NR 144.391(2)(b) by failing to obtain and operate under an appropriate operating permit, as Kikkoman no longer qualifies for an ROP-B permit because facility-wide emissions exceed 50% of the major source threshold set forth in s. NR 407.02(4).
43. Kikkoman has violated and currently is violating Wisconsin SIP s. NR 424.03(2) by emitting VOCs (ethanol) in amounts exceeding a LACT VOC emission limit of 10 tpy at Process P07, Stack S07 – Fermentation.

**MICHAEL
HARRIS**

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MICHAEL HARRIS
Date: 2025.05.30
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Michael D. Harris
Division Director
Enforcement and Compliance Assurance Division