



# U.S. Environmental Protection Agency Applicability Determination Index

---

**Control Number: 0400029**

**Category:** NSPS  
**EPA Office:** Region 5  
**Date:** 03/12/2004  
**Title:** Ethanol Manufacturing Plant  
**Recipient:** Max Felty  
**Author:** George Czerniak  
**Comments:**

---

**Subparts:** Part 60, III, SOCMI Air Oxidation Units  
Part 60, Kb, Storage Vessels for VOCs (post 7/23/84)  
Part 60, NNN, SOCMI Distillation Operations  
Part 60, RRR, VOC Emissions from SOCMI Reactor Processes  
Part 60, VV, SOCMI Equipment Leaks

---

**References:** 60.111b(k)  
60.489  
60.617  
60.667  
60.707

---

**Abstract:**

Q: Do the NSPS, subparts Kb, VV, III, NNN, and RRR apply to any of the Liquid Resources of Ohio facilities in Medina, Ohio, a plant that manufactures ethanol from waste beverages and distills ethanol from waste alcohol containing beverages?

A: NSPS subparts Kb and VV apply to all affected operations at the plant. NSPS subpart NNN applies only to the distillation of waste alcohol containing beverages. NSPS subparts III and RRR do not apply to any facilities at this plant.

---

**Letter:**

March 12, 2004

(AE-17J)

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Max Felty, Vice President of Operations  
Liquid Resources of Ohio, LLC  
909 West Smith Road  
Medina, Ohio 44256

Re: Applicability of NSPS to your  
Ethanol Manufacturing Plant

Dear Mr. Felty:

This applicability determination is intended to replace the February 12, 2004, determination letter of the same subject and issued to you by U.S. EPA.

This letter is in response to your letters dated November 24 and December 19, 2003, requesting that the United States Environmental Protection Agency (U.S. EPA) determine whether the Liquid Resources of Ohio ethanol manufacturing facility (Liquid Resources) to be located in Medina, Ohio, will be subject to the Standards of Performance for Volatile Organic Liquid Storage Vessels, 40 C.F.R. Part 60, Subpart Kb, the Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Processes, 40 C.F.R. Part 60, Subpart III, the Standards of Performance for VOC Emissions SOCMI Distillation Operations, 40 C.F.R. Part 60, Subpart NNN, the Standards of Performance for VOC Emissions from SOCMI Reactor Processes, 40 C.F.R. Part 60, Subpart RRR, and the Standards of Performance for Equipment Leaks of VOCs in the SOCMI Industry, 40 C.F.R. Part 60, Subpart VV. This letter responds to that request. The U.S. EPA's Region 5, Air Enforcement and Compliance Assurance Branch and the Office of Enforcement and Compliance Assurance have coordinated this response to your request.

#### Facility Background

Liquid Resources will be a new facility constructed in Medina, Ohio. This facility will manufacture ethanol by biological processes (fermentation) using non-hazardous liquid waste as a feedstock. Additionally, the facility will distill ethanol from waste alcoholic beverages.

## Regulatory Background

The Standards of Performance for Volatile Organic Liquid Storage Vessels, 40 C.F.R. Part 60, Subpart Kb define applicability as a storage vessel greater than or equal to specified storage capacity requirements that is constructed, reconstructed, or modified after July 23, 1984, and "is used to store volatile organic liquids (VOLs)" 40 C.F.R. Sec. 60.111b(k) defines VOLs as "any organic liquid which can emit volatile organic compounds into the atmosphere ...." Ethanol is a volatile organic compound.

The Standards of Performance for VOC Emissions From SOCM I Air Oxidation Processes, 40 C.F.R. Part 60, Subpart III define applicability as an air oxidation reactor constructed, reconstructed, or modified after October 21, 1983, that "produces any of the chemicals listed in 40 C.F.R. Sec. 60.617 as a product, co-product, by-product, or intermediate...." 40 C.F.R. Sec. 60.617 does not list ethanol as one of the chemicals affected by Subpart III.

The Standards of Performance for VOC Emissions From SOCM I Distillation Operations, 40 C.F.R. Part 60, Subpart NNN define applicability as a distillation unit constructed, reconstructed, or modified after December 30, 1983, that "produces any of the chemicals listed in 40 C.F.R. Sec. 69.667 as a product, co-product, by-product, or intermediate...." 40 C.F.R. Sec. 60.667 lists ethanol as one of the chemicals affected by Subpart NNN.

The Standards of Performance for VOC Emissions From SOCM I Reactor Processes, 40 C.F.R. Part 60, Subpart RRR define applicability as a reactor unit constructed, reconstructed, or modified after June 29, 1990, that "produces any of the chemicals listed in 40 C.F.R. Sec. 60.707 as a product, co-product, by-product, or intermediate...." 40 C.F.R. Sec. 60.707 lists ethanol as one of the chemicals affected by Subpart RRR.

The Standards of Performance for Equipment Leaks of VOCs in the SOCM I Industry, 40 C.F.R. Part 60, Subpart VV define applicability as a group of equipment within a process unit constructed or modified after January 5, 1981, that produces any of the chemicals listed in 40 C.F.R. Sec. 60.489 as "intermediates or final products..." 40 C.F.R. Sec. 60.489 lists ethanol as one of the chemicals affected by Subpart VV.

## Discussion

U.S. EPA document 450/3-83-005b, entitled Distillation Operations in Synthetic Organic Chemical Manufacturing Industry - Background Information for Proposed Standards, published December 1983 discusses the scope of 40 C.F.R. Part 60, Subpart NNN on pages 8-23. "The scope of the distillation NSPS does not include polymers, coal tar distillation products, chemicals extracted from natural sources, or chemicals totally produced by biological synthesis".

U.S. EPA document 450/3/90-016a, entitled Reactor Processes in Synthetic Organic Chemical Manufacturing Industry - Background Information for Proposed Standards, published as draft June 1990 discusses the scope of 40 C.F.R. Part 60, Subpart RRR on page 3- 2. "... a total of 173 chemical produced ... are included in the scope of reactor

processes. The list of 173 chemicals ... does not include polymers or chemicals produced exclusively by biological synthesis."

U.S. EPA memorandum dated September 8, 1998, entitled Clarification of Applicability Determination for Biomass Ethanol Production, discusses the scope of 40 C.F.R. Part 60, Subpart VV on page 1. It states that process units, "...that are producing fermented beverages solely for the purposes of human consumption are exempt from the standards; process units that are used to produce industrial grade alcohols from fermentation products are subject to the standards (Subpart VV EIS, pp 1-12, 8-7 to 8-8)."

In your December 19, 2003, letter, you indicate that the ethanol produced at your facility can be considered beverage alcohol until it is denatured at the point of loading. However, in this letter and your November 24, 2003, letter, you state that this plant will be used to produce fuel grade ethanol.

## Conclusion

Because Liquid Resources will be constructed after July 23, 1984, U.S. EPA finds that any storage vessel at Liquid Resources that meets the definition of an affected facility under NSPS Subpart Kb is subject to NSPS Subpart Kb.

Because ethanol is specifically excluded from the list of subject products of NSPS Subpart III, at 40 C.F.R. Sec. 60.617, U.S. EPA finds that the ethanol production process at Liquid Resources is not subject to NSPS Subpart III.

Ethanol is listed as a chemical affected by NSPS Subpart RRR. However, as discussed above, U.S. EPA document 450/3/90-016a indicates creation of ethanol by fermentation (biological synthesis) was excluded from the scope of this NSPS. U.S. EPA finds that NSPS Subpart RRR is not applicable to Liquid Resources.

Ethanol is listed as a chemical affected by NSPS Subpart NNN. As discussed above, U.S. EPA document 450/3-83-005b indicates that distillation operations involving chemicals produced by biological synthesis were excluded from the scope of this NSPS. However, a portion of the ethanol at Liquid Resources will be not be produced by biological synthesis but by distilling it from waste alcoholic beverages received at Liquid Resources. Therefore, U.S. EPA finds that NSPS Subpart NNN is applicable to the portion of the distillation operations at Liquid Resources that involves distillation of ethanol from waste alcoholic beverages received at the plant.

Ethanol is listed as a chemical affected by NSPS Subpart VV. The final EIS, (EPA-450/3-80-033b; June 1982) for VOC fugitive emissions (subpart VV EIS) in the SOCM I explicitly states that although process units within beer and whiskey plants that are producing fermented beverages solely for the purposes of human consumption are exempt from the standards; process units that are used to produce industrial grade alcohols from fermentation products are subject to the standards (subpart VV EIS, pp. 1-12, 8-7 to 8-8). The subpart VV EIS makes it clear that production of chemicals through biological synthesis

of agricultural materials is within the scope of subpart VV:

Furfural and grain alcohol processes use agricultural material to produce, through biological synthesis, organic chemicals that are photochemically reactive. Operations in the processing plants contain process equipment types which are fugitive emission sources (e.g. pumps, valves, etc.). The regulation, therefore appropriately covers furfural and grain alcohol.

Liquid Resources contains process units that are used to produce industrial grade alcohols from fermentation products. Despite the fact that ethanol produced could be considered beverage grade until it is shipped, the ethanol produced by the facility is non- potable and fuel grade. Therefore, U.S. EPA finds that NSPS Subpart VV is applicable to Liquid Resources.

If you have any questions regarding this applicability determination, please call Erik Hardin, of my staff, at (312) 886-2402.

Sincerely yours,

George T. Czerniak, Chief  
Air Enforcement and Compliance Assurance Branch

cc: Marcia Mia  
Office of Enforcement Compliance Assurance  
USEPA Headquarters

Frank Markunas  
Akron Air Quality Management District