



# U.S. Environmental Protection Agency

## Applicability Determination Index

Control Number: PA05

**Category:** NESHAP  
**EPA Office:**  
**Date:** 08/12/1992  
**Title:** Drain Configuration Equivalency  
**Recipient:** Spiridakis, Nicholas J.  
**Author:** Lucas, Robert B.

**Subparts:** Part 61, FF, Benzene Waste Operations

**References:** 61.340  
61.346  
61.346(a)  
61.346(b)

**Abstract:**

Is a multiple-hub drain configuration equivalent to alternative requirements of Section 61.346(b)?

No, a drain configuration with the potential for convective emissions is not acceptable.

**Letter:**

August 12, 1992

Mr. Nicholas J. Spiridakis  
Benzene NESHAP Coordinator  
Chevron Research and Technology Company  
100 Chevron Way  
Richmond, California 94802-0627

Dear Mr. Spiridakis:

I am writing in response to your letter of July 18, 1991 to John Rasnic of EPA's Stationary Source Compliance Division (SSCD). In your letter, you request that EPA review the drain configuration at a Chevron facility for equivalency to the controls required by the Benzene Waste Operations NESHAP (40 CFR Part 61, Subpart FF).

Standards for individual drain systems are in 61.346 of the regulation. The EPA's intent in establishing standards for drain systems is to ensure that benzene-containing wastes subject to the rule are collected in closed systems that contain potential benzene emissions prior to treatment.

The basic control requirement is that each drain system be equipped with a cover and closed vent system and control device that routes organic vapors from the drain system to a control device (61.346(a)). As an alternative, an owner or operator may comply with 61.346(b). The alternative requirements are basically those for individual drain systems in the new source performance standards (NSPS) for petroleum refinery wastewater systems, i.e., each drain must be equipped with water seal controls or a tightly sealed cap or plug and sewer lines shall not be open to the atmosphere. Additionally, each junction box must either be covered and equipped with a system to prevent the flow of organic vapors to the atmosphere (such as water seals) during normal operation or the junction box vent pipe must be connected to a closed vent system and control device.

Control systems other than those prescribed in the rule may be allowed if it is demonstrated that the alternative controls will achieve an emission reduction at least equivalent to that achieved by the prescribed controls. After reviewing the multiple-hub drain configuration described in your letter, it is my opinion that it is not an equivalent system to those allowable under the alternative requirements of 61.346(b). The Chevron multiple-hub drain configuration differs from the alternative control requirements because each drain does not have water seal controls or a tightly sealed cap or plug. As shown in your figure, sewer lines are open to the atmosphere in three to six different locations. This creates the potential for air flow through the system. Site visits by EPA to facilities employing drain systems similar to the Chevron system have found that these convective emissions can be significant. Our current model and most recent data for drain systems indicate that convection is a far greater factor than diffusion in the generation of emissions. Therefore, a drain configuration with the potential for convective emissions cannot be considered equivalent to a drain configuration that eliminates convective emissions.

Based on our model, the application of controls as specified in the regulation will achieve greater than 90 percent reduction in benzene emissions as compared to emissions from an open drain system. To achieve equivalent emission reduction, each drain in the Chevron system would need controls or a tightly sealed cap or plug. Contrary to Chevron's contention, our models show that this would achieve substantial reduction in benzene emissions as compared to the present configuration.

Please note that these responses represent the pinion of my office based on general information supplied in your letter. Final determination on the applicability of the Subpart FF to specific facilities should be obtained from the appropriate EPA regional offices.

If you have any questions concerning this letter, please call me at (919) 541-0884.

Sincerely,

Robert B. Lucas  
Chemicals and Petroleum Branch

cc: Dan Couturier, EPA/SSCD  
Angelia Hill, Air Enforcement Branch, Region IV