

**COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT
AIR POLLUTION CONTROL DIVISION'S**

**ODOR CONCENTRATION MEASUREMENT
(SCENTOMETRY) TEST POLICY
FOR
HOUSED COMMERCIAL SWINE FEEDING OPERATIONS**



**Colorado Department
of Public Health
and Environment**

**Air Pollution Control Division
4300 Cherry Creek Drive South
Denver, CO 80246**

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Introduction

The Air Pollution Control Division (Division) developed this policy to provide owners and operator of housed commercial swine feeding operations (HCSFOs) with testing and monitoring parameters and methods to demonstrate compliance with the odor standards that must be met at or beyond the property boundary as required by Regulation No. 2, Part B. The Division intends for this policy to address all facets of odor concentration testing and monitoring. Any questions concerning odor standard requirements should be directed to the Regulatory Development and Compliance Assistance Unit at 303.692.3150.

Regulatory Requirement (Regulation No. 2, Part B, Section IV.B.)

Regulation No. 2, Part B requires all housed commercial swine feeding operations to manage odor emissions from all aspects of the operations such that odor emissions from the operations shall not be detected at or beyond the property boundary after the odorous air has been diluted with seven (7) or more volumes of odor free air.

In order to determine compliance with the odor standard, the Division requires bi-annual (two times per year) odor concentration testing downwind at or near the property line and at two locations within the property boundary. A reading of 7:1 at or beyond the property line is considered a violation of the odor standard. A reading of 2:1 at the nearest receptor is also considered a violation of the odor standard.

Monitoring Frequency

Odor observation measurements must be taken at two times each year with one test taken during the months of January or February and one test taken during the months of July or August.

Sampling Method

The person conducting the odor concentration measurements must follow the Division's Scentometry Protocol listed below and the directions received at odor school when testing for odor concentrations using a scentometer. The location of the testing is as follows:

- At the strongest downwind odor point of the operation (at the edge or berm of the impoundment or vessel);
- At the closest property line downwind of the operation; and,
- At a location anywhere within the property as determined by the owner/operator.

When sampling at these locations, two samples must be taken for a total of six (6) readings using a Division-approved scentometer.

The testing location should be at the point of greatest odor intensity of the plume emanating from the impoundment or vessel at the downwind locations. When this location is determined, testing can be initiated. If the wind shifts more than thirty degrees during the sample period, sampling must be suspended and moved into the middle of the plume corresponding to the new direction. Sampling should then commence for the required time period.

Scentometry Protocol

The following odor observation procedures should be followed when using a Division-approved scentometer:

1. Locate source of odor using triangulation if needed.
2. Locate the odor plume downwind and off property of the source of odor origination.
3. Insert scentometer into nostrils, making sure of leak-tight fit.
4. Leak check the fit by attempting to inhale with all inlets (both odor and odor-free) closed.
5. Open odor-free ports (leaving odor inlets closed) for a period of time long enough so no odor sensation is noted. This will refresh the nasal cavity.
6. Start the odor observation by opening the smallest (largest dilution) odor inlet and determining if an odor sensation is noted at that dilution. Hold the scentometer at a 90° angle to the wind. If no odor sensation is noted, move on to the next larger inlet.
7. Record the dilution-to-threshold ratio (D/L) of that odor inlet where an odor response is first detected (highest dilution). Also record the time and wind direction.
8. Close the odor inlets and breathe through the scentometer for a long enough period of time so that no odor sensation is observed.
9. Close all ports and again document a leak-tight fit.
10. Move to an upwind (off-property) location and document time, wind direction, and that no odor is observed.
11. Return to the downwind location and repeat steps 1-9.

Recordkeeping Requirements

The odor concentration observed by the Colorado-certified odor evaluator should be recorded on a field report, including all supporting documentation such as time of test, date, weather conditions, temperature, wind direction and wind speed. All field records should be summarized in a table and included in the semi-annual or annual report. A copy of the latest calibration certification for the Scentometer should be retained for availability upon request.

Annual Odor Certification

The Division requires annual certification for company or health department personnel taking official odor observations at the property line. The Division administers Odor School Certification Courses throughout the year. Classes are on a first come basis with a maximum of twenty (20) slots available. There is a \$100.00 fee for the class. For the Division's upcoming class schedule(s), contact Roy Doyle at: 303.692.3159.