

RULE 217 LARGE CONFINED ANIMAL FACILITIES (LCAF) PERMITS REQUIRED
(Adopted 10/10/2006; Revised 2/09/2016)

A. General

A.1 Purpose

The purpose of this rule is to limit emissions of Volatile Organic Compounds (VOC) and Ammonia from Large Confined Animal Facilities (LCAF).

A.2 Applicability

This rule sets forth the permitting requirements for agricultural sources subject to permit as a result of amendments to California Health and Safety Code Section 40724.6 that became effective January 1, 2004. A written Permit to Operate shall be required for all Large Confined Animal Facilities.

B. Definitions

The following definitions apply to all terms applicable to this Rule. If a term is not defined in this Rule, then the definitions provided in Rule 101 shall apply.

B.1 AERATED STATIC PILE (ASP): a system designed, constructed, maintained, and operated for decomposing organic material in which the material is placed on top of perforated plates or pipes that are connected to blowers that either push or pull air through the piles.

B.2 AEROBIC DIGESTER: a basin or tank designed, constructed, maintained, and operated for the aerobic treatment of liquid or solid manure that is approved by the APCD, ARB, and EPA.

B.3 AEROBIC LAGOON: a lagoon designed, constructed, maintained, and operated in accordance with the applicable standards for aerobic lagoons in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 359 or other applicable standards approved by the APCD, ARB, and EPA.

B.4 ALTERNATIVE MITIGATION MEASURES: a mitigation measure that is determined by the APCD, ARB, and EPA to achieve reductions that are equal to or exceed the reductions that would be achieved by other mitigation measures listed in this rule that owners/operators could choose to comply with rule requirements.

- B.5 **ANAEROBIC DIGESTER:** a basin or tank designed, constructed, maintained, and operated for the anaerobic treatment of liquid or solid manure in accordance with the applicable standards for anaerobic digesters in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 365 or 366 or other applicable standards approved by the APCD, ARB, and EPA.
- B.6 **ANAEROBIC TREATMENT:** the decomposition of organic matter by microbes in the absence of oxygen. During this process four main reactions occur. In the first reaction, complex organic materials (e.g. carbohydrates, proteins, and fats) are hydrolyzed to form soluble organic molecules (e.g. sugars, amino acids, and fatty acids). In the second reaction, soluble organic molecules ferment to form acetic acid, formic acid, and volatile fatty acids. In the third reaction, volatile fatty acids undergo acetogenesis to form acetic acid and formic acid. In the fourth reaction, acetic acid and formic acid undergo methanogenesis to form methane and carbon dioxide.
- B.7 **ANAEROBIC TREATMENT LAGOON:** a lagoon designed, constructed, maintained, and operated in accordance with the standards for anaerobic lagoons in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Conservation Practice Standard Code 359 or other applicable standards approved by the APCD, ARB, and EPA.
- B.8 **BEEF FEEDLOT:** a CAF that is primarily concerned with raising cattle for the production of meat for commercial purposes.
- B.9 **CDFA:** California Department of Food and Agriculture or any person designed to act on its behalf.
- B.10 **CEREAL GRAINS:** grasses (members of the monocot families Poaceae or Gramineae) cultivated for the edible components of their fruit. These grains include corn, rice, wheat, barley, sorghum, millet, oats, rye, triticale, and fonio. For the purpose of this rule, buckwheat and quinoa will also be considered cereal grains.
- B.11 **CERTIFIED NUTRITIONIST:** a nutritionist certified by the American Registry of Professional Animal Scientists or who is approved by the APCD, ARB, and EPA.
- B.12 **COMPOSTING:** the controlled biological decomposition of organic material, under aerobic (with air) or anaerobic (without air) conditions, to form a humus-like material.

- B.13 **CORRAL:** an area where animals are confined without separate stalls in which the animals may rest. (also referred to as dry lot, pen, exercise pen, loafing barn, saudi barn or open lot).
- B.14 **DAY:** a twenty-four hour period beginning at 12:00 a.m. and ending at midnight.
- B.15 **DRY MANURE/DRY SEPARATED SOLIDS:** manure or separated solids with less than 50% moisture, by weight, not including any materials used for on-site composting operations.
- B.16 **DRY ROLLED CORN:** any corn that is crushed between rollers without previous treatment with steam or another softening process.
- B.17 **EMISSION MITIGATION PLAN:** a document that lists and describes all VOC mitigation measures to be implemented at the CAF.
- B.18 **FACILITY:** a source or group of air pollution sources located on one or more properties that are contiguous, adjacent, or separated only by a public right-of-way and are under common ownership, common control, or operated by entities that are under common ownership or control. A facility includes, but is not limited to, all barns, buildings, coops, corrals, feed storage areas, installations, milking parlors, structures, and systems for the collection, distribution, storage, and treatment of manure on the properties.
- B.19 **FEED BUNK:** the area where feed is placed for the animals to eat the feed.
- B.20 **FEEDAPRON:** the area in which the animal stands while eating feed. This area may also be referred to as a flush or scrape concrete lane.
- B.21 **FREESTALL BARN:** a structure for housing animals in which the animals are contained in pens under a roof and have free access to feed bunks, waterers, and stalls for resting.
- B.22 **HIGH MOISTURE CORN:** corn which, at harvest, has a kernel moisture of greater than 25%.
- B.23 **IN-CORRAL MOUNDS:** mounds of manure and/or soil which are constructed, designed, maintained, and operated by the owner/operator to allow animals to have a dry area to lay and rest during the wet season.
- B.24 **LAGOON:** a basin constructed, maintained, and operated to store and treat manure. This does not include basins primarily used to collect

runoff and storm water.

- B.25 **LARGE CAF:** a CAF that maintains, on any one day, at least the following number of animals:

Table 1 - Large CAF Definition By Livestock Category	
Livestock Category	Large CAF Definition
Beef Feedlots	3,500 beef cattle
Dairy	500 milking cows
Other Cattle Facility	3,500 calves, heifers, or other cattle
Poultry Facility	
Chicken	400,000 head
Duck	400,000 head
Turkey	100,000 head
Swine Facility	3,000 head
Horses Facility	2,500 head
Sheep and Goat Facilities	15,000 head of sheep, goats, or any combination of the two
Any livestock facility not listed above	30,000 head

- B.26 **LICENSED VETERINARIAN:** a veterinarian licensed by the State of California or a veterinarian that is approved by the APCD, ARB, and EPA.
- B.27 **MATURE COW:** a cow that has had at least one calf.
- B.28 **MILKING COW:** a cow that is currently producing milk (lactating).
- B.29 **MITIGATION MEASURE:** an activity, practice, or technology that reduces VOC air pollutants emitted by or associated with a CAF.
- B.30 **MAXIMUM ONE-TIME CAPACITY:** the maximum number of animals at the facility in each production stage (facility capacity).
- B.31 **MOLT:** the periodic replacement of feathers by shedding old feathers while producing new ones.
- B.32 **NRC:** the National Research Council of the United States of America.
- B.33 **NRCS:** the Natural Resource Conservation Service operated under the United States Department of Agriculture.
- B.34 **PHOTOTROPIC LAGOON:** a lagoon where at least 10% of the bacteria in the lagoon are photosynthetic bacterium; the bacteriochlorophyll a concentration is above 1081 g/L; or that is

designed, constructed, maintained, and operated according to other standards approved by the APCD, ARB, and EPA.

- B.35 POULTRY: any domesticated birds kept or raised for eggs or meat.
- B.36 POULTRY LITTER: poultry excretions and bedding, including, but not limited to, dried solids, manure, urine and bedding from chickens, turkeys, geese, or ducks.
- B.37 OVERALL VOC CAPTURE AND CONTROL
- B.38 OXYGEN BARRIER FILM: a plastic film with an oxygen transfer rate not exceeding $200 \text{ cm}^3/(\text{m}^2\text{-24 hrs})$ as measured by ASTM D3985 or a plastic film with an equivalent oxygen transfer rate as determined by methods approved by the APCO and EPA.
- B.39 PHASE FEEDING: the feeding of multiple diets during the nursery stage and during the grower/finisher phase.
- B.40 PROCESSED CEREAL GRAIN OR PROCESSED CORN: cereal grains or corn that have undergone one or more processes to changes the underlying chemical structure compared to the cereal grain or corn as harvested.
- B.41 RAIN EVENT: precipitation greater than 0.1 inch in 24 hours at the facility.
- B.42 SEPARATED SOLIDS: solids removed from manure by a solid separator system, not including any materials used for onsite composting operations.
- B.43 SHADE STRUCTURE: a structure designed, constructed, installed, maintained, and operated to provide shade for livestock.
- B.44 SOLID SEPARATOR SYSTEM: a system for separating solid manure from the liquid manure stream that is designed, installed, constructed, operated, and maintained in accordance with the applicable standards in California NRCS Field Office Technical Guide Conservation Practice Standard Code 632 or other applicable standards approved by the APCD, ARB, and EPA. Solid separator systems may include, but are not limited to, flat belt separators, roller press separators, vibrating screen separators, stationary inclined screen separators, weeping walls, and settling basins.
- B.45 SPLIT-SEX FEEDING PROGRAM: a feeding program that separates male and female swine after they are moved from the nursery and feed

different diets to more closely match the nutrient requirements of the different sexes.

- B.46 STEAM-FLAKED CEREAL GRAINS: cereal grain that is processed by cooking the grain with steam under pressure and then flaking the resulting material through heated rollers.
- B.47 STEAM-FLAKED CORN: corn that is processed by cooking the corn with steam under pressure and then flaking the resulting material through heated rollers.
- B.48 STORAGE POND: a basin constructed, maintained, and operated, to store manure, after it has been treated or processed in a lagoon.
- B.49 SWINE: for the purposes of this rule, and determination of the threshold in Table 2, any weaned pig of at least forty-five (45) pounds in weight, such as finishing pigs and breeding stock.
- B.50 VOC CONTROL DEVICE: a device, into which captured air is vented, that reduces the VOC content in the air prior to the air being released into the atmosphere.
- B.51 WEATHERPROOF COVERING/STORAGE STRUCTURE: A covering, such as a building or tarp, constructed, installed, maintained, and operated such that the material inside or underneath the covering is not moved or moistened by weather conditions outside of the covering including, but not limited, to wind and rain. The covering shall be maintained according to manufacturer recommendations and adhere to the applicable standards in NRCS California Field Office Technical Guide (FOTG) Conservation Practice Standard Code 313 or other applicable standards approved by the APCD, ARB, and EPA.
- B.52 YEAR: any consecutive 365-day period.

C. Requirements

- C.1 An Owner/operator shall obtain an Authority to Construct (ATC) or Permit to Operate (PTO) for the facility. Upon adoption of this rule, an owner or operator of a new or modified LCAF shall submit, for approval by the Air Pollution Control District (APCD), an Authority to Construct (ATC)/Permit to Operate (PTO) application for each LCAF. Additionally, each application shall include:
 - C.1.a The information that the APCD, or his designee, determines is necessary to prepare an emissions inventory of all regulated air

pollutants emitted from the operation, including, but not limited to, the provisions listed in C.1.b through C.1.e.

- C.1.b List of all stationary combustion equipment. The applicant must provide the APCD with the frequency of equipment use, including year and model of the equipment, capacity (Btu/hr, horsepower, etc.), hours of usage each year, and/or gallon of fuel consumption to determine the baseline emission factors.
- C.1.c List of all other significant sources of air pollution, including but not limited to, stationary irrigation pumps, gasoline storage tanks, etc.
- C.1.d The maximum one-time capacity of the facility regardless if the facility is operating at full production at the time the application is submitted.
- C.1.e An Emissions Mitigation Plan that demonstrates that the facility will reduce emissions of VOCs and Ammonia, according to the requirements of Section C.5. In addition, owner/operator of any LCAF shall implement all emission mitigation measures as contained in the permit application on the day operations of a LCAF commence.
- C.1.f In addition, the dust control plan for beef feedlots shall adhere to the requirements within Rule 420.
- C.1.g The owner/operator of LCAFs that are not a dairy, beef feedlot, swine, or poultry operations shall submit an Emissions Mitigation Plan demonstrating facility-wide reductions of at least 30% or submit an Emissions Mitigation Plan that adheres to all the applicable requirements of sections C.5.
- C.2 The APCD shall determine completeness for each ATC/PTO application according to the requirements contained within Rule 206, Section A.2. The APCD shall act upon an application pursuant to this rule within six months of receipt of a complete application.
- C.3 Temporary Suspension of Mitigation Measures

An owner/operator may temporarily suspend utilization of a mitigation measure provided all of the following requirements are met:

- C.3.a It is determined by a licensed veterinarian or certified nutritionist that the mitigation measure is detrimental to animal health or that suspension of the mitigation measure is necessary for the animal to molt, a signed, written copy of the determination shall be retained

on-site and made available for inspection upon request, and

- C.3.b The owner/operator notifies the APCD, within forty-eight (48) hours of the veterinarian's or nutritionist's determination that a measure is being temporarily suspended, and
- C.3.c If such a situation exist, or is expected to exist for longer than thirty (30) days, the owner/operator shall, within that thirty (30) day period, submit another mitigation measure from the same section of the appropriate table to be implemented in lieu of the mitigation measure that suspended. Substituted measures shall be requested by submitting was an application to modify the mitigation plan.
- C.3.d The APCD, ARB, and EPA approve the temporary suspension of the mitigation measure for the time period requested by the owner/operator and a signed written copy of this determination shall be retained on-site.
- C.4 For each existing LCAF, three months after adoption of this rule, the owner or operator of a LCAF shall submit an Emissions Mitigation Plan that updates the information submitted pursuant to section C.1 and C.6. In addition, an owner/operator of an existing LCAF shall implement all emission mitigation measures as contained in the updated Emissions Mitigation Plan within 180 days of approval of this Rule. All modifications to LCAF's shall follow Rule 207 procedures.

C.5 Facility Emission Mitigation Plan

The owner/operator shall submit a facility emission mitigation plan as part of the Permit to Operate application or Authority to Construct application.

The mitigation plan shall contain the following:

- C.5.a The name, business address, and phone number of the owner/operator responsible for the preparation and the implementation of the mitigation measure listed in the mitigation plan.
- C.5.b The signature of the owner/operator attesting to the accuracy of the information provided and adherence to implementing the activities specified in the mitigation plan at all times and the date that the application was signed.
- C.5.c A list of all the mitigation measures from Section C.6 that the owner/operator will use to comply with Rule 217 requirements; including the number of animals and acreage subject to each

control, as applicable.

C.6 Owners/operators of LCAFs shall implement control measures identified in their Emissions Mitigation Plan which shall include those applicable mitigation measures from the appropriate tables as follows:

C.6.a Beef Feedlots: Owners/operators of a beef feedlot CAF shall comply with the mitigation measures in Table 2.1

Table 2.1 Beef Feedlot Mitigation Measures Requirements

A. Feed: An owner/operator of a beef feedlot CAF shall implement at least two (2) of the following feed mitigation measures:	
1.	Feed according to National Research Council (NRC) guidelines.
2.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
3.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
4.	Implement an alternative mitigation measure(s), not listed above.

B. Silage: An owner/operator of a beef feedlot CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:	
	Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g:
	a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.
	Choose one of the following:
1.	b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types, as measured in accordance with G; or
	c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft for corn silage and at least 40 lb/cu ft for other silage types, using a spreadsheet approved by the District; or
	d. Incorporate all of the following practices when creating silage piles:
	i. Harvest silage crop at ≥65% moisture for corn; and ≥60% moisture for alfalfa/ grass and other silage crops; and
	ii. Incorporate the following parameters for Theoretical Length of Chop (TLC) and roller opening, as applicable, for the crop being harvested.

Crop Harvested	TLC	Roller Opening (mm)
Corn with no Processing	≤ ½ in	N/A
Processed Corn <35% dry matter	≤ ¾ in	1-4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal/Other	≤ ½ in	N/A

iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.

Choose two of the following:

e. Manage exposed silage (select one of the following):

- i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or
- ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet.

f. Maintain silage working face (select one of the following):

- i. Use a shaver/facer to remove silage from the silage pile; or
- ii. Maintain a smooth vertical surface on the working face of the silage pile.

g. Silage Additives (select one of the following):

- i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or
- ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or
- iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA.

2. Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.

3. Implement an alternative mitigation measure(s), not listed above.

C. Housing: An owner/operator of a beef feedlot CAF shall implement mitigation measures 1, 2, 3, and 4 and at least one (1) additional mitigation measure in each of the animal housing structures (e.g. each corral, etc.):	
1.	a. Scrape corrals twice a year with at least ninety (90) days between cleanings, excluding the removal of in-corral mounds; and b. Clean and remove manure from corrals every eighteen (18) months, including the removal of in-corral mounds.
2.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
3.	Choose one of the following: a. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; unless standing water is the result of a rain event; or b. Harrow, rake, or scrape corrals sufficiently to maintain a dry surface, unless the corrals have not held animals in the last thirty (30) days; except moisture may be permitted in areas underneath shade structures or where animals commonly congregate in large groups.
4.	If the CAF has shade structures, they must choose with one of the following: a. Install shade structures such that they are constructed with a light permeable roofing material; or b. Install all shade structures uphill of any slope in the corral; or c. Install shade structure so that the structure has a North/South orientation.
5.	Manage corrals and concrete lanes such that the dry manure depth in the pen does not exceed twelve (12) inches at any time or point, except for in-corral mounds. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
6.	Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
7.	Implement an alternative mitigation measure(s), not listed above.

D. Solid Manure/Separated Solids:

An owner/operator of a beef feedlot CAF that handles or stores solid manure or separated solids outside the animal housing shall implement at least one (1) of the

following mitigation measures:	
1.	Choose one of the following: a. Within 72 hours of removal from animal housing, either remove dry manure from the facility or, during those months where rain occurs, cover dry manure pile with a weatherproof covering, except for times, not to exceed twenty-four (24) hours per event, when wind events remove the covering; or b. Manage moisture content of manure to less than 50%.
2.	Implement an alternative mitigation measure(s), not listed above.

E. Liquid Manure: An owner/operator of a beef feedlot CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.

F. Land Application: An owner/operator of a beef feedlot CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:	
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

C.6.b Dairy CAF: An owner/operator of a large Dairy CAF shall comply with the mitigation measures in Table 2.2.

Table 2.2 Dairy CAF Mitigation Measure Requirements

A. Feed:	
An owner/operator of a dairy CAF shall implement mitigation measures 1, 2, 3, and 4 and at least one (1) additional mitigation measure:	
1.	Feed according to National Research Council (NRC) guidelines.
2.	Push feed so that it is within three (3) feet of feedapron fence within two hours of putting out the feed or use a feed trough or other feeding structure designed to maintain feed within reach of the cows.
3.	Begin feeding total mixed rations within two (2) hours of grinding and mixing rations.
4.	Store grain in a weatherproof storage structure or under a weatherproof covering from October through May.
5.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
6.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
7.	For total mixed rations that contain at least 30% by weight of silage, feed animals total mixed rations that contain at least 45% moisture.
8.	Implement an alternative mitigation measure(s), not listed above.

B. Silage:	
An owner/operator of a dairy CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:	
1.	<p>Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g:</p> <p>a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.</p> <p>b. Choose one of the following:</p> <p>b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types, as measured in accordance with G; or</p> <p>c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft for corn silage and at least 40 lb/cu ft for other silage types, using a spreadsheet approved by the District; or</p> <p>d. Incorporate all of the following practices when creating silage piles:</p> <p>i. Harvest silage crop at $\geq 65\%$ moisture for corn; and $\geq 60\%$ moisture for alfalfa/ grass and other silage crops; and</p> <p>ii. Incorporate the following parameters for Theoretical Length of Chop</p>

(TLC) and roller opening, as applicable, for the crop being harvested.		
Crop Harvested	TLC	Roller Opening (mm)
Corn with no Processing	$\leq \frac{1}{2}$ in	N/A
Processed Corn <35% dry matter	$\leq \frac{3}{4}$ in	1-4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal/Other	$\leq \frac{1}{2}$ in	N/A
<p>iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.</p> <p>Choose two of the following:</p> <p>e. Manage exposed silage (select one of the following):</p> <ul style="list-style-type: none"> i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet. <p>f. Maintain silage working face (select one of the following):</p> <ul style="list-style-type: none"> i. Use a shaver/facer to remove silage from the silage pile; or ii. Maintain a smooth vertical surface on the working face of the silage pile. <p>g. Silage Additives (select one of the following):</p> <ul style="list-style-type: none"> i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA. 		
2.	Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.	
3.	Implement an alternative mitigation measure(s), not listed above.	

C. Milking Parlor:	
An owner/operator of a dairy CAF shall implement at least one (1) of the following mitigation measures in each milking parlor:	
1.	Flush or hose milking parlor immediately prior to, immediately after, or during each milking.

2.	Implement an alternative mitigation measure(s), not listed above.
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D. Freestall Barn:	
An owner/operator of a dairy CAF that houses animals in freestalls shall implement mitigation measures 1 and 2 and at least one (1) additional mitigation measure in each freestall barn:	
1.	Pave feedaprns, where present, for a width of at least eight (8) feet along the corral side of the feedapron fence for milk and dry cows and at least six (6) feet along the corral side of the feedapron for heifers.
2.	Choose one of the following: a. Flush, scrape, or vacuum freestall flush lanes immediately prior to, immediately after, or during each milking; or b. Flush or scrape freestall flush lanes at least three (3) times per day.
3.	Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond shells, sand, or waterbeds).
4.	For a large dairy CAF, remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade freestall bedding at least once every seven (7) days.
5.	Have no animals in exercise pens or corrals at any time.
6.	Implement an alternative mitigation measure(s), not listed above.

E. Corrals:	
An owner/operator of a dairy CAF that houses animals in corrals shall implement mitigation measures 1, 2, 3, 4, 5, and 6 and at least one (1) additional mitigation measure in each corral where animals have been housed in the last thirty (30) days:	
1.	Pave feedaprns, where present, for a width of at least 8 feet along the corral side of the feedapron fence for milk and dry cows and at least 6 feet along the corral side of the feedapron for heifers.
2.	Choose one of the following: a. Clean manure from corrals at least four (4) times per year with at least sixty (60) days between cleaning; or b. Clean corrals at least once between April and July and at least once between September and December.
3.	Choose one of the following: a. Scrape, vacuum, or flush concrete lanes in corrals at least once every day for mature cows and every seven (7) days for support stock; or b. Clean concrete lanes such that the depth of manure does not exceed twelve (12) inches at any point or time.
4.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
5.	Choose one of the following: a. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at

	<p>least 1.5% where the available space for each animal is more than 400 square feet per animal; or</p> <p>b. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; or</p> <p>c. Harrow, rake, or scrape corrals sufficiently to maintain a dry surface.</p>
6.	<p>If the CAF has shade structures, they must choose one of the following:</p> <p>a. Install shade structures such that they are constructed with a light permeable roofing material; or</p> <p>b. Install all shade structures uphill of any slope in the corral; or</p> <p>c. Clean manure from under corral shades at least once every fourteen (14) days, when weather permits access into the corral; or</p> <p>d. Install shade structure so that the structure has a North/South orientation.</p>
7.	<p>Manage corrals such that the manure depth in the corral does not exceed twelve (12) inches at any time or point, except for in-corral mounding. Manure depth may exceed 12 inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of 12 inches or lower immediately upon the corral becoming accessible.</p>
8.	<p>Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed 12 inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of 12 inches or lower immediately upon the corral becoming accessible.</p>
9.	<p>Choose one of the following:</p> <p>a. Use lime or a similar absorbent material in the corrals according to the manufacturer's recommendation; or</p> <p>b. Apply thymol to the feedlot soil in accordance with the manufacturer's recommendation.</p>
10.	<p>Implement an alternative mitigation measure(s), not listed above.</p>

<p>F. Solid Manure/Separated Solids: Owners/operators of a large dairy CAF that handle or store solid manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:</p>	
1.	<p>Within seventy-two (72) hours of removal from housing, either:</p> <p>a. Remove dry manure from the facility; or</p> <p>b. Cover dry manure outside the housing with a weatherproof covering except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.</p>
2.	<p>Within seventy-two (72) hours of removal from the drying process, either:</p> <p>a. Remove separated solids from the facility; or</p> <p>b. Cover separated solids outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.</p>
3.	<p>Implement an alternative mitigation measure(s), not listed above.</p>

G. Liquid Manure: An owner/operator of a dairy CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.

H. Land Application: An owner/operator of a dairy CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:	
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

C.6.c Other Cattle CAF: Owners/Operators of an other cattle CAF shall comply with the mitigation measures in Table 2.3

Table 2.3 Other Cattle Mitigation Measure Requirements

A. Feed: An owner/operator of an other cattle CAF shall implement at least two (2) of the following feed mitigation measures:	
1.	Feed according to National Research Council (NRC) guidelines.
2.	Feed steam-flaked, dry rolled, cracked or ground corn or other steam-flaked, dry rolled, cracked or ground cereal grains.
3.	Remove uneaten wet feed from feed bunks within twenty-four (24) hours after the end of a rain event.
4.	Implement an alternative mitigation measure(s), not listed above.

B. Silage:

An owner/operator of an other cattle CAF that feeds silage shall implement at least one (1) of the following silage mitigation measures:

1. Operators selecting this option must choose mitigation measure 1a plus one (1) from mitigation measures 1b, 1c, 1d plus two (2) from mitigation measures 1e, 1f, 1g:
- a. Cover the surface of silage piles, except for the area where feed is being removed from the pile, with a plastic tarp that is at least five (5) mils thick (0.005 inches), multiple plastic tarps with a cumulative thickness of at least 5 mils (0.005 inches), or an oxygen barrier film covered with a UV resistant material, within seventy-two (72) hours of last delivery of material to the pile.
- Choose one of the following:
- b. Build silage piles such that the average bulk density of silage piles is at least 44 lb/cu ft for corn silage and 40 lb/cu ft for other silage types as measured in accordance with G; or
 - c. When creating a silage pile, adjust filling parameters to assure a calculated average bulk density of at least 44 lb/cu ft. for corn silage and at least 40 lb/cu ft for other silage types using a spreadsheet approved by the District; or
 - d. Incorporate all of the following practices when creating silage piles:
 - i. Harvest silage crop at $\geq 65\%$ moisture for corn; and $\geq 60\%$ moisture for alfalfa/ grass and other silage crops; and
 - ii. Incorporate the following parameters for Theoretical Length of Chop (TLC) and roller opening, as applicable, for the crop being harvested.

Crop Harvested	TLC	Roller Opening (mm)
Corn with no Processing	$\leq \frac{1}{2}$ in	N/A
Processed Corn <35% dry matter	$\leq \frac{3}{4}$ in	1-4 mm
Alfalfa/Grass	≤ 1.0 in	N/A
Wheat/Cereal/Other	$\leq \frac{1}{2}$ in	N/A

- iii. Manage silage material delivery such that no more than six (6) inches of material are un-compacted on top of the pile.

Choose one of the following:

- e. Manage exposed silage (select one of the following):
 - i. Manage silage piles such that only one silage pile has an uncovered face and the uncovered face has a total exposed surface area of less than 2,150 square feet; or
 - ii. Manage multiple uncovered silage piles such that the total exposed surface area of all uncovered silage piles is less than 4,300 square feet.

	<p>f. Maintain silage working face (select one of the following):</p> <ul style="list-style-type: none"> i. Use a shaver/facer to remove silage on the working face of the silage pile. ii. Maintain a smooth vertical surface on the working face of the silage pile. <p>g. Silage Additives (select one of the following):</p> <ul style="list-style-type: none"> i. Inoculate silage with homolactic lactic acid bacteria in accordance with manufacturer recommendations to achieve a concentration of at least 100,000 colony forming units per gram of wet forage; or ii. Apply propionic acid, benzoic acid, sorbic acid, sodium benzoate, or potassium sorbate at a rate specified by the manufacturer to reduce yeast counts when forming silage pile; or iii. Apply other additives at specified rates that have been demonstrated to reduce alcohol concentrations in silage and/or VOC emissions from silage and have been approved by the District and EPA.
2.	<u>Utilize a sealed feed storage system (e.g., Ag-Bag) for silage.</u>
3.	<u>Implement an alternative mitigation measure(s), not listed above.</u>

C. Freestalls:	
An owner/operator of an other cattle CAF that houses animals in freestalls shall implement mitigation measures 1 and 2 and at least one (1) additional mitigation measure in each freestall barn:	
1.	Vacuum, scrape, or flush freestalls at least once every seven (7) days.
2.	Pave feedaprons, where present, for a width of at least six (6) feet along the corral side of the feedapron.
3.	Use non-manure-based bedding and non-separated solids based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond shells, sand, or waterbeds).
4.	Remove manure that is not dry from individual cow freestall beds or rake, harrow, scrape, or grade bedding in freestalls at least once every seven (7) days.
5.	Implement an alternative mitigation measure(s), not listed above.

D. Corrals:	
An owner/operator of a other cattle CAF that houses animals in corrals shall implement mitigation measures 1, 2, 3, 4, and 5 and at least one (1) additional mitigation measure in each corral where animals have been housed in the last thirty (30) days:	
1.	Scrape corrals twice a year with at least 90 days between cleanings, excluding in-corral mounds.
2.	Choose one of the following: <ul style="list-style-type: none"> a. Scrape, vacuum, or flush concrete lanes in corrals at least once every seven (7) days; or b. Clean concrete lanes such that the depth of manure does not

	exceed twelve (12) inches at any point or time.
3.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
4.	Choose one of the following: a. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at least 1.5% where the available space for each animal is more than 400 square feet per animal. b. Maintain corrals to ensure proper drainage preventing water from standing more than forty-eight (48) hours; or c. Harrow, rake, or scrape corrals and corrals sufficiently to maintain a dry surface, unless the corrals have not held animals in the last thirty (30) days.
5.	If the CAF has shade structures, they must choose one of the following: a. Install shade structures such that they are constructed with a light permeable roofing material; or b. Install all shade structures uphill of any slope in the corral; or c. Install shade structure so that the structure has a North/South orientation.
6.	Manage corrals and concrete lanes such that the dry manure depth in the pen does not exceed twelve (12) inches at any time or point, except for in-corral mounds. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
7.	Knockdown fence line manure build-up prior to it exceeding a height of twelve (12) inches at any time or point. Manure depth may exceed twelve (12) inches when corrals become inaccessible due to rain events. The facility must resume management of the manure depth of twelve (12) inches or lower immediately upon the corral becoming accessible.
8.	Choose one of the following: a. Use lime or a similar absorbent material in the corrals according to the manufacturer's recommendation; or b. Apply thymol to the feedlot soil in accordance with the manufacturer's recommendation.
9.	Implement an alternative mitigation measure(s), not listed above.

E. Solid Manure/Separated Solids: An owner operator of an other cattle CAF that handles or stores solid manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:	
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove dry manure from the facility; or b. Cover dry manure outside the housing with a weatherproof covering from during those months where rain occurs, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.

2.	Within seventy-two (72) hours of removal from the drying process, either: a. Remove separated solids from the facility; or b. Cover separated solids outside the housing with a weatherproof covering from October through May, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
3.	Implement an alternative mitigation measure(s), not listed above.

F. Liquid Manure: An owner/operator of an other cattle CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Remove solids from the waste system with a solid separator separation system.
4.	Maintain lagoon pH between 6.5 and 7.5.
5.	Implement an alternative mitigation measure(s), not listed above.

G. Land Application: An owner/operator of an other cattle CAF who land applies manure to crop land on the facility shall implement the following applicable mitigation measures:	
1.	If the CAF applies solid manure, choose one of the following: a. Incorporate all solid manure within seventy-two (72) hours of land application; or b. Only apply solid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or c. Apply no solid manure with a moisture content of more than 50%; or d. Implement an alternative mitigation measure(s), not listed above.
2.	If the CAF applies liquid manure, choose one of the following: a. Only apply liquid manure that has been treated with an anaerobic treatment lagoon, aerobic lagoon, or digester system; or b. Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation; or c. Apply liquid/slurry manure via injection with drag hose or similar apparatus; or d. Implement an alternative mitigation measure(s), not listed above.

C.6.d Swine CAF: An owner/operator of a swine CAF shall comply with the mitigation measures in Table 2.4

Table 2.4 Swine Mitigation Measure Requirements

A. Feed: Owners/operators of a swine CAF shall implement at least two (2) of the following
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feed mitigation measures:	
1.	Use grain with an average particle size diameter between 300-800 microns.
2.	Utilize phase feeding and split-sex feeding programs to more closely match the nutrient requirements of animals.
3.	Implement an alternative mitigation measure(s), not listed above.

B. Housing: Owners/operators of a swine CAF shall implement at least three (3) of the following mitigation measures in each animal housing unit:	
1.	Use a slatted floor system (slatted floors over deep pits or shallow flush alleys), with daily manure removal for shallow flush alleys and weekly removal from deep pits.
2.	Manage pens such that the manure depth in the pen does not exceed twelve (12) inches at any time or point.
3.	Inspect water pipes and troughs and repair leaks at least once every seven (7) days.
4.	Implement an alternative mitigation measure(s), not listed above.

C. Liquid Manure: Owners/operators of a swine CAF that handle manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.

D. Land Application: Owners/operators of a swine CAF who land apply liquid manure to crop land on the facility shall implement one (1) of the following mitigation measures:	
1.	<u>Allow liquid manure to stand in the fields for no more than twenty-four (24) hours after irrigation.</u>
2.	<u>Implement an alternative mitigation measure(s), not listed above.</u>

C.5.e Layer CAF: An owner/operator of a layer CAF shall comply with the mitigation measures in Table 2.5.

Table 2.5 Layer Mitigation Measures Requirements

A. Feed: Owners/operators of a layer CAF shall implement at least one (1) of the following feed mitigation measures:	
1.	Choose one of the following: a. Feed according to NRC guidelines; or b. Feed animals probiotics designed to improve digestion according to

	manufacturer recommendations; or c. Feed animals an amino acid supplemented diet to meet their nutrient requirements; or d. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.
2.	Implement an alternative mitigation measure(s), not listed above.

B. Housing:	
Owners/operators of a layer CAF shall implement at least two (2) of the following housing mitigation measures:	
1.	Use drinkers that do not drip continuously.
2.	Inspect water pipes and drinkers and repair leaks daily.
3.	Implement an alternative mitigation measure(s), not listed above.

C. Solid Manure/Separated Solids:	
Owners/operators of a layer CAF that handle or store solid litter/manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:	
1.	Within seventy-two (72) hours of removal from housing, either: a. Remove all litter/manure from the facility; and b. Cover litter/manure outside the housing with a weatherproof covering during those months where rain occurs, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.
2.	Implement an alternative mitigation measure(s), not listed above.

D. Liquid Manure:	
Owners/operators of a layer CAF that handle manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.

C.6.d Broiler, Duck, or Turkey CAF: An owner/operator of a chicken broiler, duck, or turkey CAF shall comply with the mitigation measures in Table 2.6

Table 2.6 Broiler, Duck or Turkey Mitigation Measure Requirements

A. Feed:	
Owners/operators of a broiler, duck, or turkey CAF shall implement at least one (1) of the following feed mitigation measures:	

1.	<p>Choose one of the following:</p> <p>a. Feed according to NRC guidelines; orb. Feed animals probiotics designed to improve digestion according to manufacturer recommendations; or</p> <p>b. Feed animals probiotics designed to improve digestion according to manufacturer recommendations; or</p> <p>c. Feed animals an amino acid supplemented diet to meet their nutrient requirements; or</p> <p>d. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.</p>
2.	Implement an alternative mitigation measure(s), not listed above.

<p>B. Housing: Owners/operators of a broiler or duck CAF shall implement at least four (4) of the following housing mitigation measures:</p> <p>Owners/operators of a turkey CAF shall implement at least five (5) of the following housing mitigation measures:</p>	
1.	Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues, pursuant to Section C.1.e.
2.	Use drinkers that do not drip continuously.
3.	Inspect drinkers at least once every seven (7) days and adjust the height, volume, and location of drinkers if necessary.
4.	Inspect water pipes and drinkers and repair leaks daily.
5.	If the facility houses turkeys in pens, install mounds or berms up gradient to prevent the runoff of storm water into pens.
6.	Implement an alternative mitigation measure(s), not listed above.

<p>C. Solid Manure/Separated Solids: Owners/operators of a broiler, duck, or turkey CAF that handles or stores solid litter/manure or separated solids outside the animal housing shall implement at least one (1) of the following mitigation measures:</p>	
1.	<p>Within seventy-two (72) hours of removal from housing, either:</p> <p>a. Remove all litter/manure from the facility; or</p> <p>b. Cover litter/manure outside the housing with a weatherproof covering during those months where rain occurs, except for times when wind events remove the covering, not to exceed twenty-four (24) hours per event.</p>
2.	Implement an alternative mitigation measure(s), not listed above.

<p>D. Liquid Manure:</p>

Owners/operators of a broiler, duck, or turkey CAF that handles manure in a liquid form shall implement at least one (1) of the following mitigation measures:	
1.	Use a phototropic lagoon.
2.	Use an anaerobic treatment lagoon designed in accordance with NRCS Guideline No. 359.
3.	Maintain lagoon pH between 6.5 and 7.5.
4.	Implement an alternative mitigation measure(s), not listed above.

D. Exemptions

Except for the recordkeeping requirements of Section F, the provisions of this rule shall not apply to a CAF, which remains at all times below all of the regulatory thresholds in Table 3:

Livestock Category	Large CAF Definition
Beef Feedlots	3,500 beef cattle
Dairy	500 milking cows
Other Cattle Facility	3,500 calves, heifers, or other cattle
Poultry Facility	
Chicken	400,000 head
Duck	400,000 head
Turkey	100,000 head
Swine Facility	3,000 head
Horses Facility	2,500 head
Sheep and Goat Facilities	15,000 head of sheep, goats, or any combination of the two
Any livestock facility not listed above	30,000 head

E. Monitoring Requirements

Owners/operators shall comply with the requirements of Section E.1 when implementing all applicable Mitigation Measures in Section C.6.

E.1 Lagoon Monitoring

Owners/operators using a mitigation measure for a lagoon in their approved emissions mitigation plan shall monitor the lagoon for the required parameter(s), as determined by the District and EPA, at least once every calendar quarter, with at least 30 days between monitoring tests.

F. Administrative Requirements

F.1 Records for Exempt CAFs

An owner/operator claiming exemption pursuant to section D shall maintain records on a quarterly basis of the number and type of animals and production group at the facility. Examples of records that may be used to show proof of exemption include, but are not limited to, Dairy Herd Improvement Association records and animal inventories maintained for financial purposes.

F.2 General Records for CAFs Subject to Section C Requirements

- F.2.a Permits: Owners/operators shall maintain copies of all facility permits.
- F.2.b Number of Animals: Owner/operators shall maintain records of the number of animals of each species and production group at the facility on a quarterly basis. Examples of records that may be used include, but are not limited to, Dairy Herd Improvement Association records and animal inventories done for financial purposes.
- F.2.c Owner/operators shall maintain records sufficient to demonstrate compliance with all applicable mitigation measures.

F.3 Records for Feed and Silage Mitigation Measures

- F.3.a Feed Content/Feed Additive: Records of feed content, formulation, and quantity of feed additive utilized, sufficient to verify compliance with approved feed content and feed additive mitigation measures. Records may include laboratory test results and other test results.
- F.3.b Feed Processing: Records sufficient to verify that feed was given to animals (for example, put in feed bunks) or disposed of within the time allowed by the approved mitigation measure.
- F.3.c Feed Removal: Records demonstrating that feed is removed within the specified time period.
- F.3.d Feed Storage: Records demonstrating that feed was kept in weatherproof storage for the required period. Records for feed storage shall be required when implementing the mitigation measures.
- F.3.e Feed Moisture Content: Records for annual testing to determine moisture content of mixed ration food that contains at least 30% by weight of silage. Records for feed moisture content shall be required when implementing the mitigation measures.

- F.3.f Silage Covers: Records demonstrating that silage was covered, including the thickness of the cover, in compliance with any silage mitigation measures chosen. Examples of records that show compliance include, but are not limited to, invoices demonstrating that silage covers were installed and maintained at the facility, cover thickness, records demonstrating the thickness of the silage cover, and maintenance records for repair or replacement of damaged covers.
- F.3.g Silage Pile Bulk Density at Pile Formation: Records of required practices used to ensure adequate bulk density of silage piles and/or measured bulk density of silage piles. Records for silage bulk density shall be required when implementing the mitigation measures.
- F.3.h Silage Pile Formation: Records demonstrating that silage piles were formed in compliance with any silage mitigation measures chosen. Examples of records that show compliance include, but are not limited to, moisture content of silage pile material, records of the length of cut for the crop being harvested, records of silage material delivery date, records that there are no more than six inches of material un-compacted on top of the pile of silage piles. Records for silage pile formation shall be required when implementing the mitigation measures.
- F.3.i Silage Leachate: Records demonstrating that the leachate was collected either by an active or passive system and the system was maintained in a manner approved by the APCO and EPA. Examples of records that show compliance include, but are not limited to, design specification for the system and a maintenance checklist for inspections and repairs.
- F.3.j Exposed Silage: Records demonstrating that silage piles are managed such that exposed surface area is in compliance with any silage mitigation measures chosen. Records for exposed silage shall be required when implementing the mitigation measures.
- F.3.k Silage Inoculation: Records demonstrating silage inoculation with either homolactic lactic acid bacteria, propionic acid, benzoic acid, sorbic acid sodium benzoate, or potassium sorbate. Records shall include rate specified by manufacturer and rate applied by operator/owner, date of inoculation and date of silage pile formation completion. Records for silage inoculation shall be required when implementing the mitigation measures.

F.3.l VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.

F.3.m Weatherproof Coverings: Records verifying that any covers used are installed, used, and maintained in accordance with manufacturer recommendations and any applicable standard approved by the APCO and EPA. For covers removed by wind events, an estimate of when the cover was removed and documentation of when the cover was replaced.

F.3.n Alternative Feed or Silage Mitigation Measures: Records sufficient to verify compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.

F.4 Records for Milking Parlor Mitigation Measures

F.4.a Records verifying that the milking parlor was flushed or hosed immediately prior to, immediately after, or during each milking.

F.5 Records for Freestall/Corral/Animal Housing

F.5.a Bedding Material: Records of the material(s) used for animal bedding, including the percentage of non-manure. Records for bedding material shall be required when implementing the mitigation measures.

F.5.b Clean/Scrape/Flush/Vacuum: Records sufficient to demonstrate that the removal of manure/bedding was performed as required in the approved mitigation measure. This may be a log when owners/operators initial that they performed all applicable practices.

F.5.c Depth of Manure: Records demonstrating the measurement of the manure depth and measures taken to remove material greater than the amount allowed by the mitigation measure.

F.5.d Foggers: Records, such as design specifications, demonstrating that foggers used to comply with rule requirements meet the required standards.

F.5.e Lime, Thymol, and Eugenol: Records of the quantity of material applied and the area over which it was applied. Owners/operators shall also maintain manufacturer's product application recommendations to demonstrate compliance with the recommendations.

- F.5.f Litter Additives: Records, including a copy of the manufacturer's recommendations, which demonstrate litter additives used to comply with rule requirements are administered in accordance with manufacturer's specifications.
 - F.5.g Roof Structure/Runoff: Records such as design specifications and maintenance logs demonstrating that any roof runoff structures used to comply with rule are in compliance with applicable standards in NRCS Field Office Technical Guide Code 558 or other applicable standards approved by the APCO and EPA.
 - F.5.h Shade Structures: Records, such as design specifications, demonstrating that any shade structures used to comply with rule requirements meet the required standards.
 - F.5.i Slope/Drainage: Records sufficient to verify that harrowing and sloping of corrals used to comply with rule requirements are implemented as required in the rule.
 - F.5.j Vacuum/Land Apply Cattle Waste: Records showing time of vacuuming and time of land application of the vacuumed solids.
 - F.5.k VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.
 - F.5.l Water Pipes, Drinkers, and Water Troughs: Records of inspections performed and repairs completed.
 - F.5.m Wet Feed Removal: Records verifying that animal housing was inspected for wet feed after a rain event/inspection and that the wet feed was removed.
 - F.5.n Alternative Freestall/Corral/Animal Housing Mitigation Measure: Records that demonstrate compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.
- F.6 Records for Solid Manure/Separated Solids Outside of Animal Housing
- E.6.a Aerated Static Pile: Records of monitoring/inspection logs and maintenance logs.
 - F.6.b Removal of Manure/Separated Solids: Records sufficient to verify when the waste was removed from freestall/corral/animal housing and when the waste was either removed from the facility or land

incorporated.

F.6.c Storage of Manure/Separated Solids in an Aerobic/Anaerobic Digester.

F.6.c.1 Records, such as design specifications and maintenance logs, demonstrating that any aerobic/anaerobic digesters used to comply with rule requirements meets the standards in NRCS Field Office Technical Guide Code 366 or 365 or other applicable standards approved by the APCO and EPA.

F.6.c.2 Records of the quantity of manure/separated solids, as needed, to comply with the approved mitigation measure.

F.6.d VOC Emission Control Systems: Source test results, monitoring/inspection logs and maintenance logs.

F.6.e Weatherproof Coverings: Records verifying that any covers used are installed, used, and maintained in accordance with manufacturer recommendations and any applicable standard approved by the APCO and EPA. For covers removed by wind events, an estimate of when the cover was removed and documentation of when the manure/separated solid piles were re-covered.

F.6.f Alternative Solid Manure/Separated Solids Mitigation Measure: Records that demonstrate compliance with each approved alternative mitigation measure to the satisfaction of the APCO and EPA.

F.7 Records for Liquid Manure

F.7.a Lagoons

F.7.a.1 Test results of the approved monitoring parameter and records of measures taken to bring the parameter within specified limits.

F.7.a.2 Design specifications demonstrating that the lagoon meets the requirements listed in the NRCS Field Office Technical Guide for the lagoon type or other applicable standards approved by the APCO and EPA.

F.7.b Solids Separator System

- F.7.b.1 Records, such as design specifications and maintenance logs, demonstrating that the solids separator system meets the approved mitigation measure specifications and is operated and maintained as recommended by the manufacturer.
- F.7.b.2 Non-Standard Chemicals: Record the quantity of material used. Owners/operators shall also maintain manufacturer's product usage recommendations to demonstrate compliance with the manufacturer's recommendations.
- F.7.b.3 Non-Standard Equipment for Solid Separator System: Records, such as design specifications and maintenance logs, demonstrating that the solids separator equipment meets the approved mitigation measure specifications and is operated and maintained as recommended by the manufacturer.
- F.7.c VOC Emission Control Systems, including biofilters and other VOC emission control systems: source test results, monitoring/inspection logs and maintenance logs.
- F.7.d Alternative Liquid Manure Mitigation Measures: Records that demonstrate compliance with the approved alternative mitigation measure, to the satisfaction of the APCO and EPA.
- F.8 Records for Land Application of Manure
 - F.8.a Time to Incorporate Manure: Records indicating the time the manure was applied and when the waste was incorporated into the soil.
 - F.8.b Lagoon-Treated or Digester-Treated Manure: Records that demonstrate that the applied manure came from an aerobic lagoon, an anaerobic treatment lagoon or a digester system.
 - F.8.c Liquid Waste Standing in Field: Records that demonstrate that liquid manure does not remain in the field for longer than twenty-four (24) hours after application.
 - F.8.d Moisture Content of Solid Manure: Records of the moisture content of applied solid manure.
- F.9 Source Testing Requirements

- F.9.a Owners/operators shall conduct an initial source test of all VOC control devices and aerated static piles used to comply with rule requirements not later than six (6) months after the date of installation, and at least once every twelve (12) months thereafter unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.
- F.9.b Owners/operators using phototropic lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for bacteria concentration, bacteriochlorophyll concentration, or a surrogate parameter determined by the APCO, ARB, and EPA not later than six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.
- F.9.c Owners/operators using aerobic lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for dissolved oxygen content not later than six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.
- F.9.d Owners/operators using mechanically aerated lagoons as a mitigation measure in their emission mitigation plan shall test lagoons for biological oxygen demand within six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.
- F.9.e Owners/operators using lagoon pH as a mitigation measure in their emission mitigation plan shall test lagoons for pH within six (6) months after the date of issuance of the permit, and at least once every twelve (12) months thereafter, unless the APCO, ARB, and EPA determines more frequent testing is required to demonstrate compliance with rule requirements.
- F.9.f Owners/operators shall test any other parameters determined necessary by the APCO, ARB, and EPA to demonstrate compliance with rule requirements as frequently as determined necessary by the APCO, ARB, and EPA.

G. Test Methods

Owners/operators shall conduct applicable testing using the following methods or any other alternative test method approved by the APCD and EPA. Test methods referenced shall be the latest approved version.

- G.1 Bacterial Concentration - ASTM D4454 - 85(2009) Standard Test Method for Simultaneous Enumeration of Total and Respiring Bacteria in Aquatic Systems by Microscopy or ASTM D4455 - 85(2009) Standard Test Method for Enumeration of Aquatic Bacteria by Epifluorescence Microscopy Counting Procedure.
- G.2 Bacteriochlorophyll a Concentration - ASTM D3731 - 87 (2004) Standard Practices for Measurement of Chlorophyll Content of Algae in Surface Waters.
- G.3 Biological Oxygen Demand - EPA Method 405.1 (Biochemical Oxygen Demand (5 days, 20°C)).
- G.4 Bulk Packing Density of Silage Piles - Remove representative samples of known volume using a forage probe or other instrument and weighing the samples. Bulk density is the weight of the sample divided by the volume of material removed from the pile. The bulk density shall be determined as the average of the least three representatives samples per silage pile.
- G.5 Biofilter Control Efficiency - The control efficiency of a biofilter shall be determined using SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources). The SCAQMD Method 25.3 apparatus should be connected to sample directly inside the flux chamber or duct as applicable. Compost emissions are considered as water soluble sources where the 50 ppm applicability limit of Method 25.3 does not apply. Samples from more than one location may be combined (composited) per SCAQMD Rule 1133.2 Attachment A Section 8.
- G.6 Non-Biofilter Control Efficiency - The control efficiency of a VOC emission control system that is not a biofilter shall be determined using:
 - G.6.a EPA Methods 2 (Determination of Stack Gas Velocity and Volumetric Flow Rate (Type s Pitot Tube), 2A (Volume Meters, or 2D (Rate Meters) for measuring flow rates.

- G.6.b EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device.
 - G.6.c EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.
 - G.7 Dissolved Oxygen - EPA Method 360.1 (Oxygen, Dissolved (Membrane Electrode)) or 360.2 (Oxygen, Dissolved (Modified Winker, Full-Bottle Technique)).
 - G.8 Moisture Content for Biofilters - Test Methods for the Examination of Compost and Composting (TMECC) Method 3.09 (Total Solids and Moisture at 70±5 degrees Centigrade).
 - G.9 Moisture Content for Silage - Soil, Plant and Water References Methods for the Western Region (Third Edition, 2005) Test Methods P1.10 (Dry Matter Content - Gravimetric), or American Association of Agricultural and Biological Engineers (ASABE) Standard S358.2, National Forage Testing Association (NFTA) Method 2.1.3 and 2.1.4 AOAC Methods: 930.15,934.01,991.01, and 2001.1.
 - G.10 Organic Loading - Standard Methods of the Examination of Water and Wastewater Method 2540G - Solids.
 - G.11 pH - EPA Method 150.2 (pH, Electrometric) or TMECC Method 04.11-A (1:5 Slurry pH)
 - G.12 Temperatures - EPA Method 170.1 (Temperature - Thermometric)
 - G.13 Alternatives Test Methods - An operator may use an alternative test method to those listed in Sections G through G.12 for which written approval of the APCD and EPA has been obtained.
- H. Compliance Determination
- H.1 Any violation of this underlying LCAF permit constitutes a violation of Rule 217.
 - H.2 Pursuant to District Rule 212, the APCD may update LCAF permits upon annual renewal, or as necessary, to include conditions necessary for compliance.

I. Annual Renewal Permits

Annual Renewal Permits to Operate for LCAF shall be renewed according to the conditions set forth within Rule 206 and Rule 301.

J. Recordkeeping

All owners of confined animal facilities, regardless of size, shall keep records that specify the daily number and type of animals maintained at the facility in each production stage, the current ATC or PTO permit, the current Facility Mitigation Plan and other records necessary to demonstrate compliance. Current records shall be maintained and kept on-site for two years, except for major sources where records shall be maintained and kept on-site for 5 years, after the date of each entry and shall be presented to the APCD, or his designee, within 72 hours of notice to the owner or operator.

K. Public Review

Noticing prior to issuing any permit for LCAF, the draft permit shall be available for public review and inspection for a period of no less than 30 calendar days. To identify the location, the public notice shall include only the property address, city and state of the LCAF, as well as any other relevant permit information.

L. Non-duplication

Information required to be submitted pursuant to other Air District Rules and Regulations that are applicable to a LCAF as determined by the APCD.

M. Other Provisions

Any permit issued to a LCAF is subject to all applicable provisions of the California Health & Safety Code and the Air District Rules and Regulations.