

**ATTACHMENT B**  
**ORDER R5-2017-0000**

**WASTE MANAGEMENT PLAN FOR THE PRODUCTION AREA  
FOR  
CONFINED BOVINE FEEDING OPERATIONS**

A Waste Management Plan (WMP) for the production area is required for all Confined Bovine Feeding Operations placed in the Full General Order Coverage Tier of Waste Discharge Requirements General Order R5-2017-0000 (Bovine General Order or Order) and shall address all of the items below.

Confined Bovine Feeding Operations which are regulated as Limited Time or Limited Population Operations need to prepare an Operation and Maintenance Plan containing the information described in sections F and H of this attachment. Limited Time Operations need to submit the Operation and Maintenance Plan to the Central Valley Water Board.

The portions of the WMP that are related to facility and design specifications (sections B and C of this attachment) must be prepared by, or under the responsible charge of, and certified by a civil engineer or certified engineering geologist who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work. Minor changes to the WMP that do not require the exercise of engineering judgement do not require the signature of the licensed professional described above. The WMP shall be revised when conditions in the production area change.

The purpose of the WMP is to ensure that the production area of the Confined Bovine Feeding Operation is designed, constructed, operated and maintained so that wastes generated at the facility are managed in compliance with the Bovine General Order in order to prevent adverse impacts to groundwater and surface water quality.

**Contents of the WMP:**

- A. A description of the facility that includes:
1. The name of the facility and the county in which it is located;
  2. The address and Assessor's Parcel Number;
  3. The name(s), address(es), and telephone number(s) of the property owner(s), facility operator(s), and the contact person for the facility;
  4. Present and maximum animal population as indicated below (this information is in the Notice of Intent submitted as application for coverage under the Bovine General Order):

Type of Animals	Maximum number of animals housed at the facility in one month between 12/2013 and 12/2016 (specify month and year used) or the maximum herd size identified in an approved CEQA or CEQA equivalent document	Current number of animals housed at the facility (specify date of information)
	DATE / /	DATE / /
Mature Cows and Bulls (> 24 months)		
Steers and Heifers (15 – 24 months)		
Steer and Heifer Calves (7 to 14 months)		
Calves (up to 6 months)		
Other types of Bovine stock		

5. Total volume (gallons) of wastewater generated daily and how this volume was determined; and
6. A Site Map (or Maps) of appropriate scale to show property boundaries and the following in sufficient detail:
  - a. The location of the features of the production area including:
    - i. Structures used for animal housing and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and animal water supply) and groundwater monitoring wells; and
    - ii. Wastewater conveyance structures, discharge points, and discharge/mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures,

drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

- b. The location and features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or wastewater from the production area is or may be applied for nutrient recycling) including:
  - i. A field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); an indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field; and
  - ii. Wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements;
- c. The location of all cropland that is part of the Confined Bovine Feeding Operation but is not used for waste application, including the Assessor's Parcel Number(s), total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is registered under an Irrigated Lands Regulatory Program coalition instead of the Bovine General Order;
- d. The location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the Confined Bovine Feeding Operation and the location of all public water system wells within 1,500 feet of the production area or land application area(s) associated with the facility; and
- e. A vicinity map with scale, north arrow, and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

- B. An engineering report demonstrating that the facility has adequate containment capacity. The report shall include calculations showing if the existing containment structures are able to retain all facility wastewater generated, together with all precipitation on and drainage through manured areas, up to and including during a 25-year, 24-hour storm. A settling basin may be included in storage calculations only if it is not used for manure separation. If a facility has multiple settling basins and a cleanout schedule such that at any point some are empty of manure, the quantity of storage represented by such empty basins can be included in the calculation of containment capacity.

As part of the description of the containment capacity of the facility, the description of the dimensions of the ponds in the wastewater management system shall include the height of the pond embankment relative to the land surface and the depth of the pond below the top of the embankment.

1. The determination of the necessary storage volume shall reflect:
  - a. The maximum period of time, as defined in the Nutrient Management Plan (section C.2 under “Contents of a Nutrient Management Plan” in **Attachment C**), anticipated between land application events (storage period), which shall consider application of wastewater or manure to the land application area as allowed by the Bovine General Order using proper timing and rate of applications;
  - b. Manure, wastewater, and other wastes accumulated during the storage period;
  - c. Normal precipitation or normal precipitation times a factor of one and a half, less evaporation on the surface area during the entire storage period. If normal precipitation is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in B.3 of this attachment;
  - d. Normal runoff (runoff from normal precipitation), or runoff due to normal precipitation times a factor of one and a half, from the production area during the storage period. If normal runoff is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in B.3 of this attachment (Note: clean storm water that is diverted to a storm water pond or otherwise appropriately managed does not need to be included in the necessary storage volume);
  - e. 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility;

- f. 25-year, 24-hour runoff from the facility's drainage area;
    - g. Residual solids after liquids have been removed; and
    - h. Necessary freeboard (one foot of freeboard for belowground retention ponds and two feet of freeboard for aboveground retention ponds). If there is a pipe through a pond embankment that is not or cannot be effectively sealed with a valve or by some other method, all measurements of freeboard and all storage calculations need to treat the bottom of the pipe as the top of the embankment. Where ponds are connected by a pipe that is not/cannot be effectively sealed with a valve or by some other method, storage calculations shall not include any storage where the use of that storage in one lagoon will cause the other lagoon to have less freeboard than required under the Bovine General Order.
2. If the facility's storage capacity is inadequate, the WMP shall include proposed modifications or improvements. Any proposed modifications or improvements must be prepared by, or under the responsible charge of, and certified by a civil engineer or certified engineering geologist who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work, and must include:
  - a. Design calculations demonstrating that adequate containment will be achieved;
  - b. Details on the liner, pan lysimeter, and leachate collection and removal system (if appropriate) materials;
  - c. A schedule for construction and certification of completion to comply with the Schedule of Tasks M.1 of the Bovine General Order;
  - d. Pursuant to California Code of Regulations, Title 27, sections 20323 and 20324, a construction quality assurance plan describing testing and observations needed to document construction of the pond; and
  - e. An operation and maintenance plan for the pond.
3. Contingency Plan: If the necessary storage volume calculated in B.1 or B.2 of this attachment is based on normal precipitation and/or runoff rather than precipitation or runoff from normal precipitation times a factor of one and a half (see B.1.c and B.1.d of this attachment), then the engineering report shall include a Contingency Plan that includes a plan on how the excess

precipitation and/or runoff that is generated during higher than normal precipitation will be managed. If the Contingency Plan includes plans to discharge the excess runoff and/or precipitation to land without being in conformance with the NMP, then the Contingency Plan shall include a Monitoring Well Installation and Sampling Plan (MWISP) with a schedule for implementation that proposes monitoring wells to determine the impacts of such disposal on groundwater quality.

- C. An engineering report showing if the facility has adequate flood protection. If the Discharger can provide to the Executive Officer an appropriate published flood zone map that shows the facility is outside the relevant flood zone, an engineering report showing adequate flood protection is not required for that facility. The engineering report shall include a map and cross-sections to scale, calculations, and specifications as necessary. The engineering report shall also describe the size, elevation, and location of all features present to protect the facility from inundation or washout as follows:
1. For facilities in the Sacramento River and San Joaquin River Basins, showing if:
    - a. The ponds and manured areas at facilities in operation on or before 27 November 1984 are protected from inundation or washout by overflow from any stream channel during 20-year peak storm flow; or
    - b. Existing facilities in operation on or before 27 November 1984 that are protected against 100-year peak storm flows will continue such protection; or
    - c. Facilities, or portions thereof, which began operation after 27 November 1984, are protected against 100-year peak storm flows.
  2. For facilities in the Tulare Lake Basin, showing if the facility is protected from overflow from stream channels during 20-year peak stream flows for facilities that existed as of 25 July 1975 and protected from 100-year peak stream flows for facilities constructed after 25 July 1975.
  3. If the facility's flood protection does not meet these minimum requirements, the WMP shall include proposed modifications or improvements with the corresponding design to achieve the necessary flood protection and a schedule for construction and certification of completion to comply with the Schedule of Tasks M.1 of the Bovine General Order.
- D. A report assessing if the animal confinement areas, animal housing, and manure and feed storage areas are designed and constructed properly.

1. The report shall assess if the following design and construction criteria are met:
    - a. Corrals and/or pens are designed and constructed to collect and divert all wastewater to the retention pond;
    - b. The animal housing area (e.g., barn, shed, etc.) is designed and constructed to divert all water that has contacted animal wastes to the retention pond; and
    - c. Manure and feed storage areas are designed and constructed to collect and divert runoff and leachate from these areas to the retention pond.
  2. If the facility does not meet the above design and construction criteria, the WMP shall include proposed modifications or improvements to achieve the criteria and a schedule for construction and certification of completion to comply with the Schedule of Tasks M.1 of the Bovine General Order.
- E. For Full Coverage Confined Bovine Feeding Operations, an Operation and Maintenance Plan that includes:
1. Mortality Management Plan describing the procedure for disposal of dead animals, both under routine conditions and emergency disposal, and including name and contact information on any outside entity involved in carcass disposal for the Confined Bovine Feeding Operation.
  2. Standard Operating Procedures for manure and feed storage areas, corrals and/or pens, and animal housing areas (e.g. barn, shed, etc.), to ensure that leachate and water that has contacted waste is collected and diverted to a retention pond and that infiltration of leachate and water that has contacted waste to the underlying soils is minimized. The Procedures should ensure that gutters, downspouts, or other runoff controls are maintained, and that water is diverted away from manure or other containments within the production area, unless such drainage is fully contained and is included in the storage requirement calculations required in section B of this attachment. The Procedures should ensure that there is no discharge of waste or storm water to surface waters from the production area. The Procedures should ensure that all animals are prevented from entering any surface water within the production area.
  3. Standard Operating Procedures for manure storage and removal, including the frequency of cleanouts of manure from pens, timing of manure removal or protocols for covering manure prior to forecasted major storm events, and the duration of time that stacked manure remains on site.

4. Location of, maintenance procedures for, and testing frequencies for mechanical Backflow Prevention Devices.
  5. For wastewater ponds, Standard Operating Procedures describing the dates when freeboard will be monitored in wastewater ponds and what the target freeboard needs to be (and by what date) to ensure adequate winter storage capacity. The Procedures should include a schedule for lowering the pond so that the target freeboard will be met each fall, and ensure that the point on the depth marker that represents the needed storage is clearly posted at the facility. The Procedures should include a schedule for visual inspections to identify and remediate problems related to odor, breeding of mosquitoes, damage from burrowing animals, damage from equipment during removal of solids, embankment settlement, erosion, seepage, excess weeds, algae, and vegetation. The Procedures should include a schedule and procedures for the periodic removal of solids from the wastewater pond to ensure that pond capacity is maintained and damage to any pond liner is prevented.
  6. A Chemical Management Plan to ensure that chemicals and other contaminants handled at the facility are properly collected and disposed of when used or no longer needed.
  7. A schedule for periodic review of the combined amount of salt in animal drinking water and feed to verify that salt is limited to the animal requirements.
  8. A schedule for regular inspections to ensure that the animal housing area is maintained to collect and divert all water that has contacted animal wastes to a retention pond and to minimize the infiltration of water into the underlying soils.
- F. For Limited Time and Limited Population Operations, an Operation and Maintenance Plan that includes:
1. Mortality Management Plan describing the procedure for disposal of dead animals, both under routine conditions and emergency disposal, and including name and contact information on any outside entity involved in carcass disposal for the Bovine Operation; and
  2. Standard Operating Procedures for manure storage and removal, including the frequency of cleanouts of manure from pens, timing of manure removal or protocols for covering manure prior to forecasted major storm events, duration of time that stacked manure remains on site, and maintenance of runoff controls for the manure storage area.

- G. Documentation from a trained professional (i.e., a person certified by the American Backflow Prevention Association, an inspector from a State or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training) that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map required in A.6 of this attachment.
- H. The certification required in Required Reports and Notices K.2.a of the Bovine General Order.