

California Regional Water Quality Control Board
San Francisco Bay Region

General Waste Discharge Requirements

**Waste Management Plan
Minimum Requirements**

(Only Dischargers with liquid waste retention ponds within Tier 2 or Tier 3)

Order No. R2-2016-0031 (hereafter, General WDRs) requires Dischargers of dairies and other confined animal facilities (CAF) that utilize liquid waste retention ponds, to prepare and implement a Waste Management Plan (WMP) for activities within the production and/or confined areas including, but not limited to, the corrals, barns, feed storage area, compost piles, retention ponds, dry manure storage areas, animal wash areas, and onsite ancillary operations such as food processing.

The purpose of the WMP is to ensure that the CAF is designed, constructed, operated, and maintained so that wastes, nutrients, and contaminants generated by the facility are managed to prevent adverse impacts to surface water and groundwater quality. The WMP must evaluate existing facilities and pollutant sources/problems and describe how these sources are controlled utilizing Best Management Practices (BMPs) depending on the type and size of the confined animal facility. The plan must detail how the facility operator maintains compliance with General WDRs discharge prohibitions and discharge specifications for all confined areas and retention ponds.

The level of regulatory oversight is dependent upon each Discharger's designated water quality risk (as defined in General WDRs, Finding 5). Tier specific requirements are described in Sections A and B below.

A. Tier 2 (CAFs with liquid waste retention ponds):

1. Dischargers have the option to prepare the entire WMP, including containment structure specifications, through a technical education program administered by a qualified professional. Examples of these professionals include, but are not limited to, registered professional engineers (PE), or the qualified staff of the Natural Resource Conservation District (NRCS), Resource Conservation Districts (RCDs), the University California Cooperative Extension, or technical service providers (TSPs) certified by the NRCS. The Executive Officer may approve the use of alternative specialists.
2. The WMP must include a statement from the Discharger or responsible professional that the WMP was developed in accordance with the requirements of the General WDRs, that it includes all necessary documentation (including calculations), and that all contents of the WMP were done consistent with requirements of the General WDRs and Title 27. Within two years of submitting an NOI, this statement must be submitted to the Executive Officer by separate letter or as an attachment to the Annual Report.
3. The facility WMP must be kept on the CAF site and must be made available for review by Water Board staff during inspections. Temporary controls must be in place to prevent waste discharges to surface water and groundwater prior to implementation of the completed plan.

B. Tier 3 (Dairies and other CAFs with liquid waste retention ponds):

1. The WMP must be prepared by a qualified professional, as described above in Requirement A.1. Portions of the plan related to manure and/or waste containment and structural facility specifications shall be certified by a civil engineer who is registered pursuant to California law or another person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.
2. Within one year of Tier 3 designation or submittal of a Notice of Intent, the WMP must be completed and submitted to the Water Board for review. It must also be kept on the CAF site and made available for review by Water Board staff during inspections. Temporary controls must be in place to prevent waste discharges to surface water and groundwater prior to implementation of the completed plan.
3. The WMP must include a professional assessment of the overall facility, evaluating any conditions or problems preventing compliance with the State's minimum standards and/or requirements of the General WDRs (i.e., overgrazed areas, erosion problems, condition of waste collection system, proximity of confined areas to waterways, etc.).
4. The WMP must include an improvement schedule, including short-term corrective measures to immediately address identified pollutant sources, and needed corrective measures that may require a long-term schedule due to logistics and economic considerations. Such a schedule shall not exceed 3 years.

The plan must contain the following site-specific information:

C. Facility Description

1. Facility Name and Address.
2. Assessor's Parcel Number, and Township, Range, Section(s), and Baseline Meridian of the property where the CAF is located.
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. A description of all activities and operations on the facility (type of animals, where and how are the animals housed and/or confined, type of waste containment facilities used, other onsite food processing operations such as cheese-making).
5. Maximum animal population categories as listed in the Notice of Intent (General WDRs Attachment F, G or H).
6. A site map (or maps) of appropriate scale to show property boundaries, all existing and proposed land-use designations (crops, grazed areas, buildings, pastures, covered and uncovered confined areas, feeding areas, etc.) and the following in sufficient detail:
 - a. Structures used for animal housing, milk production, food processing, 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 barn wells) and groundwater monitoring wells.

- b. Process 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.
- c. The basic location and features of all land application areas under the Discharger's control (total acres of each field, whether it is owned, rented, or leased) to which manure or process wastewater from the production area is or may be applied for nutrient recycling. A separate map with land application details is required in the Nutrient Management Plan (NMP, General WDRs Attachment D).
- d. The location of pasture lands and the pathways which animals travel to and from the production areas (if applicable).

D. Waste Containment Capacity

1. The WMP must contain an analysis of the existing facility's waste containment capacity. The report shall include calculations of average daily volumes of manure and waste water generated (liquids and solids), showing that the existing containment structures are capable of retaining all the process water generated by the facility, together with all precipitation on and drainage through manured areas or waste/feedstock storage areas that are likely to accumulate up to and during a 25-year, 24 hour storm event.
2. The determination of the necessary pond storage volume shall reflect:
 - a. The maximum period of time (storage period) anticipated between land application events based on the NMP;
 - b. The volume of manure and all process wastewater accumulated during the storage period;
 - c. Normal precipitation or normal precipitation times a factor of one and a half (1.5), less evaporation on the surface area during the entire storage period. If normal precipitation is used in the calculation of necessary storage volume, the WMP shall include a Contingency Plan, as specified below;
 - d. Runoff from production and manure storage areas resulting from normal precipitation (or runoff due to normal precipitation times a factor of one and a half) during the storage period. If normal precipitation runoff is used in the calculation of necessary storage volume, the WMP shall include a Contingency Plan, as specified below;
 - e. 25-year, 24-hour precipitation on the facility's retention pond surface(s) (at the required design storage volume level);
 - f. 25-year, 24-hour runoff from the area of the facility draining to the retention pond;
 - g. Residual solids after liquids have been removed; and
 - h. To maintain structural integrity in all ponds and protect water quality, two feet of freeboard shall be maintained in partially or completely aboveground ponds and one (1) foot of freeboard shall be maintained in pond structures that are completely in ground. Freeboard shall be measured vertically, from the water surface up to the point on the surrounding berm or dike having the lowest elevation, and shall be designed and constructed to prevent overtopping as a result of windy storm conditions. Lesser

freeboard may be approved by the Executive Officer for soil and clay lined ponds if documented by a registered civil engineer that structural integrity and required capacity will not be compromised with the proposed freeboard.

3. Existing retention ponds must, at a minimum, be lined with, or underlain by, soils which contain at least ten (10) percent clay and not more than ten (10) percent gravel or artificial materials or materials with equivalent impermeability or include additional lining materials necessary to comply with the General WDRs Discharge Prohibitions.
4. Retention ponds (or expanded ponds) constructed after adoption of the General WDRs must comply with NRCS Waste Storage Facility Code 313 including a maximum specific discharge (unit seepage rate) of 1×10^{-6} cm/sec. Such ponds may not be used until the Discharger submits a report verifying that the liner meets this requirement. Waste shall not be placed into the retention pond until after Water Board staff notifies the Discharger in writing that the report is acceptable.

E. Facility Design

1. Animal confinement areas and storage areas for manure, feeds, soil amendments, and other potential sources of contaminants shall be designed, constructed, operated and maintained to retain all waste, wastewater, and stormwater contacting these areas that are likely to accumulate up to and during a 25-year, 24 hour storm event. The following features shall be included:
 - a. The production facility is designed, constructed, and operated to minimize infiltration of manure into the underlying soils and to collect and divert all wastewater to the retention pond(s);
 - b. Corrals and other animal housing is designed and constructed to divert all water that has contacted manure or wastewater to a retention pond(s) or other type of containment;
 - c. Storage areas for manure, soil amendments, feed and other materials are designed and constructed to minimize infiltration of leachate and to divert clean stormwater runoff away from these areas unless all runoff from these areas is discharged to the retention pond(s). Where practicable, these areas should be covered to prevent storm water contact;
 - d. All precipitation and clean surface drainage outside of manured and waste storage areas, including that from roofed areas and tributary drainages, shall be diverted away from manured and waste storage areas, unless such drainage is fully contained in a retention pond and is included in the calculation of retention pond storage volume requirements. Covers shall be used where practical during precipitation to reduce leaching and runoff.
 - e. All animal confinement areas, and feed and waste storage areas, shall be managed to minimize standing water as of 72 hours after the last rainfall and the infiltration of water into underlying soils.

F. Flood Protection

1. The WMP shall contain documentation (engineering report or a copy of flood zone map) that the production area has adequate flood protection in accordance with the following Title 27 requirement:

“Retention ponds and manured areas at CAFs in operation on November 27, 1984, shall be protected from inundation or washout by overflow from any stream channel during 20-year peak flows. CAFs existing before November 27, 1984, and that are protected against 100-year peak stream flows must continue to provide such protection. New CAFs, or portions thereof, that began operating after November 27, 1984, shall be protected against 100-year peak stream flows.”

2. Retention ponds must be in conformance with NRCS Waste Storage Facility Code 313 which states that: *“Waste storage facilities must be planned, designed, and constructed to meet all federal, state, and local laws and regulations. To minimize the potential for contamination of streams, waste storage facilities should be located outside of floodplains, however, if site restriction require location within a floodplain, they shall be protected from inundation or damage from a 25-year flood event, or larger if required by laws, rules and regulations.”*

G. Operation and Maintenance

A detailed Operations and Management Plan shall be developed in order to comply with all Discharge Prohibitions, Waste Discharge Specifications, and Provisions of the General WDRs. This plan shall also include, but not be limited to, the following:

1. A description of all erosion and sediment control measures implemented at the CAF to protect surface water. Such measures may include, but are not limited to, installation of bridges, culverts, or armored crossings, fencing, barriers, vegetative buffers, vegetative cover and/or other control measures to protect surface waters and water quality. Feeding and locating water troughs, shade, and salt/nutrient blocks away from the watercourses may also be appropriate and are encouraged wherever possible.
2. A description of pollution prevention measures for confined areas including heavily used areas devoid of vegetation, such as travel lanes and feed racks. Uncovered feeding and/or confined loafing areas must be scraped / cleaned prior to the start of the rainy season, but no later than October 31. These areas should not be used during the rainy season, unless all storm water contacting these areas is contained.
3. A determination of the facility’s overall animal capacity with respect to existing facility design and which will prevent the discharge of animal waste or polluted stormwater to waters of the State.
4. An evaluation of any areas where animals may have access to creek channels and identification of pollution prevention measures both currently used and needed in the future to restrict animal access. All confined animals shall be fenced or excluded from any surface water or perennial streams passing through the confined area. Creek crossings shall be bridged in a manner that prevents animal waste from entering the waterway.

5. A description of pollution prevention measures for all non-manure waste or wastewater streams including, but not limited to, silage leachate, compost leachate, dead animals, waste milk, veterinary medical waste, solid and liquid waste from onsite slaughtering, solid and liquid waste from onsite food processing (such as cheese), spoiled feed, bedding, and any precipitation contacting these materials. The disposal of dead animals at the facility or in any liquid manure or wastewater retention pond is prohibited. The Discharger must dispose of dead animals in compliance with all applicable federal, State, county, and local laws and regulations.
6. A detailed description of any onsite activities or operations that may generate additional waste and/or wastewater that may be co-mingled with the animal production waste stream (such as onsite cheese-making operations). Such a description must include, at a minimum, an analysis of all waste constituents and concentrations, estimates of daily volumes generated, pollution prevention management measures for such activities, and documentation that the existing waste containment system has the capacity to include such wastes.
7. The operation and maintenance for retention ponds must ensure that:
 - a. Corrals and/or pens are designed and maintained to direct all process water and stormwater to the retention pond(s);
 - b. The production facilities (e.g., barn, shed, milk parlor) are designed and maintained to direct all process wastewater and stormwater that has contacted manure, feedstocks, or soil amendments to the retention pond(s);
 - c. All ponds must be managed to prevent nuisances (odors, breeding of mosquitoes, etc.), damage from burrowing animals, damage from equipment during removal of solids, embankment settlement, erosion, seepage, excess weeds, algae, and other vegetation;
 - d. Retention ponds must provide necessary storage volume prior to winter storms, maintain capacity considering buildup of solids, and comply with the minimum freeboard. For ponds designated to contain the runoff from a 25 year /24 hour storm event, it is recommended that a depth marker be placed within the retention pond that clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25 year/ 24 hour storm;
 - e. The removal of solids from any lined pond must prevent damage to the pond liner; and
 - f. Retention pond inspections and clean-out shall be conducted prior to the start of the rainy season, but no later than **October 31** of each year to ensure design storage capacity.
8. A contingency plan is required if the necessary calculated storage volume is based on normal precipitation and/or runoff rather than precipitation or runoff from normal precipitation times a factor of one and a half. This plan shall describe how the excess precipitation will be managed and also shall outline emergency response options for situations such as loss of freeboard due to higher than normal precipitation, pipeline breaks, power outage, earthquake and/or flood. The contingency plan shall include names and numbers for emergency waste haulers and pump rental companies, and alternative waste disposal options, such as nearby waste ponds with adequate capacity or municipal waste treatment facilities willing to accept wastewater in an emergency situation.

9. Manifests are required to be kept onsite to record transfer of waste to outside facilities and must be kept as part of the WMP. The application of manure or process water to lands not owned, leased, or controlled by the Discharger without written permission from the landowner is prohibited. The requirements for such third party agreements are outlined in Attachment D. Nutrient Management Plan Minimum Requirements.
10. Chemicals, including, but not limited to pesticides, herbicides, fungicides, cleaning products, equipment/machinery fluids, fertilizers and other contaminants at the facilities must be used according to manufacturer's directions and in accordance with federal, State, county, and local regulations. Chemicals must not be disposed of in any manure or process water, or stormwater storage or treatment system, unless the unit is specifically designed to treat such chemicals and other contaminants. The use of disinfectants per label directions is allowed. The WMP must identify which chemicals are used within the production facility, including the volume and frequency of use.
11. The WMP must contain an emergency spill prevention plan (SPP) detailing measures to be taken in the case of a discharge or threatened discharge of manure, chemicals, sediment, nutrients, or pathogens to surface water or groundwater. Personnel training, first response actions, and emergency contacts must be described in the SPP. The SPP must be kept onsite and made accessible to CAF personnel. A copy of the SPP must be included in the WMP for review by Water Board staff during inspections.
12. Wellheads must be protected to prevent movement of contaminants to groundwater. The WMP must discuss the manner by which wellheads are protected. The WMP must contain 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 waste into a well. The Executive Officer may approve the use of alternative specialists. If testing or modification of the well and/or associated piping is recommended by a responsible professional, then all testing and modifications are to be completed within 90 days from the time of the recommendation.
13. Water Wells, Section 8, Par II, in the *California Well Standards, Supplemental Bulletin 74-90 (June 1991)*, and *Bulletin 94-91 (December 1981)*, California Department of Water Resources (DWR), contains well setback standards. A setback of 100 feet is required between supply wells and animal enclosures in the production area. A minimum setback of 100 feet, or other control structures (such as housing, berming, grading), shall also be required for the protection of existing wells or new wells installed in the cropland. If a county or local agency adopts more stringent setback standards than that adopted by DWR, then these local standards shall carry precedence over the DWR Well Standards, and the Discharger shall comply with the more stringent standards.