

C. Integrated Approaches

California
Santa Ana Region



Groundwater Protection

[General Waste Discharge Requirements for Concentrated Animal Feeding Operations \[CAFO\] \(Dairies and Related Facilities\) Within the Santa Ana Region \(Order No. R8-2013-0001, NPDES No. CAG018001, Dairy General Permit\)](#) supports groundwater cleanup, or avoids further degradation, by prohibiting disposal of manure to any land within Chino Basin, California (Chino-North, Chino-East, and Chino-South Groundwater Management Zones).

The Chino Basin once had the highest concentration of dairy animals in the world, with approximately 350 dairies and over 300,000 dairy cows in a 20 square mile area. While the number of Chino Basin dairies declined to 86 in 2015, historic land application of manure and process wastewater in the Chino Basin resulted in significant groundwater degradation due to high levels of total dissolved solids (TDS) and nitrate. In response to groundwater degradation, the Dairy General Permit prohibits land application of manure, process wastewater, and CAFO production area stormwater runoff in the Chino Basin.

General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) Within the Santa Ana Region

Order No. R8-2013-0001, NPDES No. CAG018001

II. PERMIT PROVISIONS

II.A. DISCHARGE PROHIBITIONS

II.A.14. The disposal of manure to any land within Chino Basin (Chino-North, Chino-East, and Chino-South Groundwater Management Zones) is prohibited. The application of manure, process wastewater, and/or storm water runoff from manured areas, on cropland outside of the Chino Basin (but within the Region) that overlie groundwater management zones lacking assimilative capacity for TDS and/or nitrate-nitrogen is also prohibited unless a plan, acceptable to the [Santa Ana Regional Water Quality Control Board's] Executive Officer, is implemented that offsets the effects of such application on the underlying groundwater management zone.

The Dairy General Permit also seeks to minimize continued degradation of groundwater in other parts of the Santa Ana Region. The application of manure, process wastewater, or stormwater runoff from manured areas to cropland outside of the Chino Basin that overlie groundwater management zones lacking assimilative capacity for TDS and/or nitrate-nitrogen is also prohibited. Dairies overlying management zones lacking assimilative capacity may land apply manure or wastewater only in accordance with an approved plan to offset the effects of such application on the underlying groundwater management zone. The Santa Ana Regional Water Quality Control Board's (Santa Ana Regional Board) Basin Plan includes [maps](#) delineating areas that overlie groundwater management zones.

Programmatic Framework

The Santa Ana Regional Board, as the designated NPDES permitting authority, determined that every animal feeding operation (AFO) with a herd size of more than 20 cows or 50 heifers, calves, or cattle

within the Santa Ana Region is a significant contributor of pollutants to waters of the U.S. As such, these facilities must be regulated under waste discharge requirements.

The Dairy General Permit is issued pursuant to Section 402 of the CWA and implementing regulations adopted by the U.S. Environmental Protection Agency and Chapter 5.5, Division 7 of the California Water Code ([Water Code, § 13370 et seq.](#)).

Regulations governing discharges from California confined animal facilities, including dairies, are contained in [Division 2, Title 27](#) of the Combined State Water Resources Control Board/California Department of Resources Recycling and Recovery (CalRecycle, previously Integrated Waste Management Board) AB 1220 Regulations, which became effective on July 18, 1997. [Chapter 7, Subchapter 2 \(Article 1\)](#) contains requirements for confined animal facilities.

Implementation

According to the Santa Ana Regional Board, as of 2015, 86 CAFOs (with 96,000 animals total) are prohibited from land applying manure to any land within Chino Basin ([Chino-North, Chino-East, and Chino-South Groundwater Management Zones](#)).

Results

According to the Santa Ana Regional Board, in 2015 approximately 45,000 tons of manure was hauled out of the Chino Basin. Approximately half was exported to a composting facility in the lower Santa Ana River watershed (California). The other half was exported out of the Santa Ana Region to be composted or applied to cropland.

The San Jacinto River Basin, located east of the Chino Basin but still within the Santa Ana Region, overlies a groundwater management zone that lacks assimilative capacity for TDS and nitrate-nitrogen. The 28 dairies in the San Jacinto River Basin submitted a [salt offset and dairy impacts report](#) (offset report) to the Santa Ana Regional Board in November 2014. The offset report established the degree to which elevated TDS and nitrate concentrations detected in groundwater could be caused by dairy activities in the San Jacinto area and whether individual dairies have impacted local groundwater TDS and nitrate concentrations.

As of April 2016, the 28 dairies in the San Jacinto River Basin submitted work plans for offsetting TDS and nitrate impacts to groundwater to the Santa Ana Regional Board for review and approval. Impacts may be offset through actions by individual dairies or in conjunction with other potential sources of TDS and nitrate contamination to groundwater.

References

WRCAC (Western Riverside County Agriculture Coalition). 2014, November 11. *San Jacinto Salt Offset and Dairy Impacts Report*.
http://www.waterboards.ca.gov/santaana/water_issues/programs/dairies/docs/San_Jacinto_Salt_Offset_Study_Final.pdf. Accessed April 5, 2016.
