

Outline Nutrient Management Plan (NMP)

Contact: Cherie Blatt, North Coast Regional Water Quality Control Board
CBlatt@waterboards.ca.gov (707) 576-2755
http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/

The facilities covered under the following Orders are required to develop and implement a NMP if manure and/or dairy process water is applied to land as a soil amendment or source of nutrients:

- Conditional Waiver Order No. R1-2012-0003: 700 or more mature dairy cows (milking + dry). This NMP is encouraged and recommended for all smaller dairies.
- General Waste Discharge Requirements (GWDR) Order No. R1-2012-0002: All enrolled.

Manure and process water cannot be applied to land for the purpose of disposal. Manure and process water that are wastes must be disposed at an appropriate permitted disposal facility. All Dischargers must report on NMP progress by filling out the Annual Report (Monitoring and Reporting Program (MRP), Appendix 3) for submittal by November 30 each year beginning in 2013.

NMP Development and Modifications

Developed by the Dischargers with the assistance of specialists such as those with a degree in or certification from:

- Soil Scientist
- Agronomist
- Crop Advisor
- University of California Cooperative Extension (UCCE) service advisor or technician
- Technical Service Provider certified by the Natural Resources Conservation Service (NRCS)

In particular, Dischargers shall get assistance from these specialists in completing the nutrient budget calculations. The Regional Water Board staff may approve the use of alternative specialists.

The nutrient budget component of the NMP shall be revised within 30 days when:

- Discharges from a land application area result in exceedence of water quality objectives

The NMP shall be revised within 90 days when any of the following occur:

- Site-specific information becomes available to replace default values used in the initial NMP
- Changes in operating practices result in the production of nutrients that are not addressed by the NMP
- Crops will be grown that are not covered by the NMP
- There is a change of 15% or more in the acreage used for land application
- The NMP is not effective in preventing periodic discharges of manure or process water to Waters of the United States (US)

The Discharger shall review the NMP annually and revise it if changes in conditions or practices at the dairy require changes in the NMP. The review/revision date must be noted in the NMP. Records on the timing and amounts of manure and process water applied to land and information developed

through a Monitoring and Reporting Program (MRP) associated with the Waiver Order for the dairy must be considered when making decisions related to nutrient management.

Management of Dairy Manure and Process Water

Compliance with the following management measures is required once the Discharger begins implementation of the NMP. Best Management Practices (BMPs) must be in place to prevent discharges to surface waters at all times:

The collection, treatment, storage, or application of manure or process water shall not result in:

- Degradation of surface water or groundwater
- Contamination or pollution of surface water or groundwater
- A condition of nuisance (as defined by the California Water Code Section 13050)
- Violation of any applicable local, state, or federal laws or regulations
- Exceedence of any applicable water quality objective in the Basin Plan
- Exceedence of any applicable state or federal water quality criteria
- Discharge of process water to surface water
- Discharge of stormwater to surface water from land where manure or process water has been applied, unless all applications to land are in accordance with a NMP
- Application of manure and process water to land not in accordance with a NMP

Contents of NMP

Contact Information including the name, mailing address, and phone number of:

- The dairy owner
- The dairy operator (if different)
- Any specialist who participated in the development of the NMP

Specific dates:

- The date that the NMP was completed
- The date that the NMP will be implemented
- The dates of anticipated NMP reviews and revisions

Description of the dairy:

- Name of the dairy
- Dairy address (if no street number, the street and nearest cross street)
- Design maximum cow population by type (milk cows, dry cows, heifers, calves) as of 19 January 2012
- Current cow population by type
- Assessor's Parcel Number(s) for the dairy and all associated land
- The total acreage for each Assessor's Parcel
- The acreage used for crops including pasture
- The acreage used for application of manure, process water, or both
- The crop rotation, if any, within each land application area

Maps (USGS quadrangle or equivalent), aerial photos, and/or drawings showing the locations of:

- The dairy
- Production area
- Livestock feeding areas
- Livestock housing areas
- Feed storage areas
- Manure and process water storage areas
- Milk barn
- Chemical storage areas
- Waste storage areas
- Areas under the Discharger's control to which manure or process water may be applied
- Surface water courses and conveyances
- Underground pipelines
- Where process water is mixed with irrigation water or discharged
- Drainage flows for the production area and each field
- Drainage ditches and drainage easements
- Drainage controls (berms, levees, etc.) for tailwater and storm water
- Extent of subsurface (tile) drainage systems and associated discharge points
- Pumping facilities and flow meters
- Wells and type (domestic, industrial, agricultural, or monitoring)
- Storm water discharge points
- Any septic systems
- Water quality sampling points
- Map legend

More than one map may be used for clarity. These mapping components are also required in the Water Quality Plan (MRP, Appendix 1). Duplicates may be used.

Nutrient Budget Calculations:

- Showing all sources of nutrients used by the facility
- Rate of nutrient applications (e.g., pounds of nitrogen per acre) based on analytical data
- Storage capacity for manure and process water based on maximum time between land application events
- Must be reviewed annually and updated if any significant changes in conditions or practices at the dairy that necessitate changes in the NMP

Describe Land Application Practices and Water Quality Protection:

- Nutrient application practices for each crop in each land application area
- Application schedule based on seasonal and climatic conditions, the growth stage of the crop, and the availability of water
- Methods of nutrient application based on site-specific conditions and the minimization of discharge
- BMPs that are implemented to protect surface water and groundwater (i.e., 100-foot setbacks, 35-foot vegetative buffers, or any more stringent alternative practice approved by a professional)

- BMPs to minimize impacts due to excess application of nutrients
- All surface water or potential conduits to surface water within 100 feet of any land application area

Sampling and Analysis Program:

- Describe sampling locations
- Describe sampling frequency
- Describe sampling collection and preservation procedures
- Identify analytical laboratory utilized (must be certified or approved by RWB staff)
- Identify analyses to be conducted for soil, manure, soil amendments, process water, irrigation water, plant tissue, etc.
- Analytical results shall be used during the development, implementation, and revision of the NMP
- Soils and crop tissues shall be analyzed for available phosphorus at least once every 5 years
- Ammonia Nitrogen (NH₄) and Total Nitrogen will be measured through water and soil sampling

Laboratory analysis methods are identified in California Analytical Methods Manual for Dairy General Order Compliance – Nutrient Management Plan Constituents:

http://anlab.ucdavis.edu/docs/uc_analytical_methods.pdf

Field Risk Assessment:

- Sample discharges of stormwater from land application areas to surface water (see MRP)
- Analytical results shall be used to assess water quality conditions and to inform management practices

If results indicate a potential for adverse impacts to receiving waters, the Discharger shall modify their NMP to reduce such movement and collect additional samples to assess the effectiveness of the modifications.

Record-Keeping and NMP Review:

- Maintain records for each land application area
- Use the records as a basis for revisions to the NMP
- NMP must be available for Regional Water Board staff review during inspections