California Regional Water Quality Control Board
North Coast Region

Conditional Waiver of Waste Discharge Requirements

Monitoring and Reporting Program
Order No. R1-2012-0003

For

Existing Cow Dairies
Region Wide

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code Section 13267(b) and is associated with the Waiver of Waste Discharge Requirements (Waiver) Order No. R1-2012-0002 for cow dairies. This MRP requires that regular monitoring, sampling, and record-keeping be conducted by dairy owners and operators (hereinafter "Dischargers") and that the records by made available to California Regional Water Quality Control Board, North Coast Region, (hereinafter Regional Water Board) staff. Visual inspections, monitoring, surface water and groundwater sampling, analyses, reporting, and review, will help to prevent uncontrolled waste discharges and to protect water quality.

Appendix 1 to this MRP presents requirements for the Water Quality Plan (WQP) which will help to ensure that the dairy production areas are designed, constructed, operated and maintained to prevent adverse impacts to surface water and groundwater. Appendix 2 of this MRP includes minimum requirements for a Nutrient Management Plan (NMP) for large CAFO (concentrated animal feeding operations) dairies of 700 or more dairy cows. Finally, this MRP requires submittal of an Annual Report, including sampling results to be submitted to the Regional Water Board November 30 of each year (Appendix 3).

The Regional Water Board may give approved TMDL offset dairy projects an alternative schedule for enrollment and submittal of MRP reports.

I. MONITORING

Visual inspections, and sampling of surface water and groundwater are required to assess compliance with conditions of this Order and the North Coast Basin Plan. Sampling results shall be used by the Discharger to assess water quality conditions and to inform management practices.

A. Visual Inspections

This MRP requires periodic visual inspections to ensure the dairy is being operated and maintained in compliance with the Order. Visual inspections shall be done when conditions are safe to do so. Except where otherwise noted in

this MRP, visual inspections shall be conducted prior to, during, and after anticipated storm events, and during dry conditions and inspections shall be conducted on a monthly basis at a minimum. Key observations made during inspections and corrective actions taken shall be documented in each Annual Report. All adverse conditions resulting in a discharge found during these inspections shall be reported to the Regional Water Board within 24 hours and shall be recorded and the records retained onsite for a period of five years. Corrective actions shall be implemented to stop the discharge as soon as possible.

1. **Production Area**
   The Discharger shall conduct inspections of the production area **daily,** including all manure containment facilities, pumping equipment, water lines, and animal confinement areas, and note any waste discharges from the property under the control of the Discharger. Any noncompliance with the Order shall be reported to the Regional Water Board. Discharges that are a threat to human health or the environment shall be identified as such.

2. **Holding Pond Freeboard**
   The Discharger(s) shall measure the freeboard **weekly** in each holding pond or liquid containment structure. Freeboard is the vertical distance from the pond surface to the lowest elevation of the surrounding berm or the bottom of the spillway. The size of ponds/containment structures needed to contain waste materials and rain water from a 25 year 24-hour storm event will vary from facility to facility. To maintain structural integrity and prevent a discharge two feet of freeboard shall be maintained in ponds/structures located partially or completely above ground, and one foot of freeboard shall be maintained in ponds/structures that are completely in ground. Noncompliance shall be reported to the Regional Water Board.

3. **Manure Containment Structures**
   Manure containment structures shall be inspected for berm integrity, cracking, slumping, excess vegetation, animal burrows, and seepage. Repairs shall be made to avoid discharges to surface water and/or groundwater, and noted in the Annual Report. Any uncontrolled discharges shall be reported to the Regional Water Board.

4. **Animal Confinement Areas**
   Animal confinement areas within the production area shall be inspected periodically to ensure that all pollution prevention measures, as specified in the facility's WQP, are implemented and effective.

5. **Discharges**
   Receiving waters upstream and downstream of the dairy shall be inspected to monitor any change in water quality resulting from dairy operations. Any adverse change in water quality, including color or turbidity, shall be reported to the Regional Water Board.

6. **Cropland and Pasture**
   The Discharger(s) shall inspect any cropland on which process water or manure is applied at least once daily during each irrigation event. Dates, occurrences, location, and estimated amounts of unauthorized releases from the manure containment structures (e.g. ponds) or cropland, either off-property or to surface water drainage courses, shall be documented and reported to the Regional Water Board as noncompliance. Any erosion, conditions of field saturation, or runoff from the cropland containing pollutants shall be remedied as necessary to protect water quality and prevent nuisance conditions.

B. Water Quality Testing

Water quality sampling and reporting is required to allow the Regional Water Board to assess compliance with Basin Plan water quality objectives. The following sampling and reporting shall be conducted:

1. Surface Water Sampling

Surface watercourses that flow through the dairy property, including the production area, cropland, or pastures, must be sampled using grab samples at the point where watercourses enter and leave the property. If multiple watercourses flow through the property, the Discharger may request in writing, reduced representative sampling locations. Alternatively, if surface waters flow adjacent to but not through the property, and are located such that they could be impacted by activities at the dairy, the grab samples should be collected upstream and downstream of the areas closest to the dairy property, assuring legal access for sampling. Sampling shall take place during or directly following each of three (3) major storm events of one (1) inch or more per 24 hours, during the rainy season, beginning in the winter of 2012/2013. Sampling events shall be at least one (1) month apart. Sampling shall be done when conditions are safe to do so. Visual observations, such as changes in color or turbidity, must be recorded at the time of surface water sampling and reported in or submitted with the Annual Report.

Temperature, pH, and electrical conductivity shall be measured on-site with a handheld data sonde or comparable field equipment. Total ammonia nitrogen

shall be measured either with a field test kit (colorimetric field test kits are acceptable) or by a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Regional Water Board. These laboratory analyses shall be conducted in accordance with the Title 40 Code of Federal Regulations Part 136 (*Guidelines Establishing Test Procedures for the Analysis of Pollutants*) or other test methods approved by the Regional Water Board. Three (3) measurements of electrical conductivity taken 3 minutes apart shall be recorded during each sampling event at each location. One (1) sample to be tested for total ammonia nitrogen, pH, and temperature shall be collected at each sampling location for each sampling.

Samples shall be tested for the following constituents:

Constituent	***Units***
Electrical Conductivity (EC)	Mmhos
Total Ammonia Nitrogen (NH_4)	mg/L
pH	
Temperature	^oC

2. Groundwater Well Sampling

Representative wells located at the dairy, including domestic and agricultural supply wells, shall be sampled four (4) times total, approximately six (6) months apart. A sample must be collected in: (1) Fall 2012, (2) Spring 2013, (3) Fall 2013, and (4) Spring 2014. Results of groundwater samples collected consistent with the sampling protocols of this Order and within these time frames for another purpose (e.g. for a County Health Department or by the County milk inspector) may be submitted to the Regional Water Board instead of collecting additional samples. The sample must be representative of groundwater well conditions (i.e. not disinfected).

Groundwater samples from domestic wells shall be collected from the tap before the pressure tank after water has been pumped from this tap for 10 to 20 minutes. If the sample cannot be collected prior to a pressure tank, the well must be purged at least twice the volume of the pressure tank. Groundwater samples from agricultural supply wells shall be collected after the pump has run for a minimum of 30 minutes or after at least three well volumes have been purged from the well. Alternatives to this protocol may be approved by the Regional Water Board.

One (1) sample from each well shall be tested for the following parameters:

Constituent	***Units***
Nitrate	mg/L
Fecal Coliform Bacteria	MPN/100mL

Groundwater samples shall be analyzed by a laboratory certified by the State Department of Health Services or a laboratory pre-approved by the Regional Water Board.

3. Sampling Protocol

a. The Discharger shall use clean sample containers and sample handling, storage, and preservation methods that are accepted or recommended by the selected analytical laboratory or, as appropriate, in accordance with approved United States Environmental Protection Agency analytical methods.

b. All samples collected shall be representative of the volume and nature of the material being sampled.

c. All sample containers shall be labeled and records maintained to show the time and date of collection as well as the person collecting the sample and the sample location.

d. All samples collected for laboratory analyses shall be preserved and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed.

e. All samples submitted to a laboratory for analyses shall be identified in a properly completed and signed Chain of Custody form.

f. Results of both surface water and groundwater well samples must be submitted to the Regional Water Board with the Annual Report due after sample results are obtained. If sample results exceed Basin Plan water quality objectives or other public health standards, the Discharger shall note the exceedence in the Annual Report. The Regional Water Board may require corrective actions and additional monitoring.

g. Field test instruments used for electrical conductivity, pH, temperature, and total ammonia nitrogen, may be used, provided:

    1. The operator is trained in the proper use and maintenance of the instruments;

2. The instruments are field calibrated prior to each monitoring event; and

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency.

h. Alternative sampling protocols shall be approved by Regional Water Board staff. Consultation with the California Dairy Quality Assurance Program regarding sampling protocol is encouraged, and the California Analytical Methods Manual for Dairy General Order Compliance – Nutrient Management Plan Constituents laboratory analysis methods document is a valuable reference, located at: http://anlab.ucdavis.edu/docs/uc_analytical_methods.pdf

4. Additional Monitoring

The Regional Water Board may require additional monitoring or may modify the existing monitoring program as appropriate on a site-specific or watershed basis. Future management practices and/or monitoring requirements may also be imposed by the Regional Water Board, within those waterbodies listed as impaired due to constituents that may be present in waste from cow dairies under federal Clean Water Act Section 303(d).

5. Group Sampling

One option for fulfilling this monitoring requirement is to form a representative monitoring group, to develop and/or administer a local, watershed-based surface or groundwater monitoring program. The Regional Water Board staff may allow the Discharger to use data gathered from the representative monitoring program to substitute for some or all of the required monitoring of individual dairies, if the Discharger can demonstrate that the data are valid.

6. Basin Plan Water Quality Objectives

Water quality objectives are presented in Section 3 of the Water Quality Control Plan for the North Coast Basin (Basin Plan), which is posted on the Regional Water Board web page at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/basin_plan.shtml.

II. REPORTING

A. Documentation and Annual Report

The objective of the Annual Report (MRP Appendix 3) is to provide updates using photographs and narrative text on new management practices and the effectiveness of existing management practices. Documentation of compliance with conditions of the Order must be submitted to the Regional Water Board in the Annual Report due each November 30 starting in 2013. The annual reporting period is November 1 through October 31. Regional Board staff will review the Annual Report and provide comments if necessary for the facility to meet the Order requirements. If the Regional Water Board provides comments on the Annual Report or any technical report, the discharger will be required to address those comments. A copy of the Annual Report including photo documentation must be kept at the facility for Regional Water Board review during inspections. The contents of the Annual Report shall include:

1. Photos shall be taken each year by November 1 and submitted to the Regional Water Board to confirm that:
   A. The liners of the manure ponds are protective of water quality (free of weeds and cracks that may disturb the liner), and
   B. The manure ponds have sufficient storage capacity prior to the rainy season as required in the Order.

2. Photos of other pollution prevention measures to protect surface and groundwater must also be submitted with the Annual Report. Photos of permanent pollution prevention measures only need to be submitted in an Annual Report once, as long as the measures are still operational and effective. Examples of pollution prevention measures include:

   a. cleaning up of pollutant-containing materials from areas where stormwater runoff occurs,
   b. covering of manure, compost, and feed storage areas,
   c. installing impermeable ground covering in manure storage areas,
   d. protecting watercourses from erosion and wastes, and
   e. any other best management practices or control measures for water quality protection.

3. A narrative summary of measures taken to protect surface and groundwater and to meet conditions of the Order. Where appropriate, sketches of pollution prevention measures implemented since the previous Annual Report may also be submitted.

4. Analytical results of surface water and groundwater samples. If participating in a group monitoring effort pre-approved by the Regional Water Board, the Discharger must submit a statement identifying the group. If results of groundwater samples collected for another purpose are submitted to meet these MRP requirements, an explanation is required in the Annual Report.

B. Noncompliance Reporting

The Discharger shall report any spill, discharge, or other type of noncompliance that violates the conditions of this Order and/or endangers human health or the environment within 24 hours of becoming aware of its occurrence. The incident shall be reported to the **Regional Water Board office (707) 576-2220, and to the California Office of Emergency Services (OES) (510) 286-0895**. During non-business hours, the Discharger shall leave a message on the Regional Board's office voice mail. The OES is operational 24 hours a day. The message shall include the time, date, place, and description of the discharge. A written report shall be submitted to the Regional Water Board office within fourteen (14) business days of the Discharger becoming aware of the incident. The report shall include complete details of the steps that the Discharger has taken, or intends to take, in order to prevent recurrence. The written submission shall, at a minimum, contain:

1. The approximate date, time, and location of the discharge;

2. A description of the noncompliance and its cause;

3. The flow rate, volume, and duration of the discharge;

4. Note if the noncompliance has been corrected and/or the actual or anticipated time for achieving compliance; and

5. A time schedule and a plan to implement necessary corrective actions to prevent the recurrence of such discharges.

The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in terminating the applicability of this Order to a specific facility or discharger.

If during the performance of Discharger and/or Regional Water Board staff inspections, deficiencies, defects, and/or impending failures are observed in any of the manure-contacted water conveyance, control, and/or retention structures, the Discharger shall take immediate action to correct and/or prevent

any unauthorized release. The corrective action(s) must be documented and these records attached to the Annual Report.

C. Record-Keeping

The Discharger shall create, maintain for five years, and make available to the Regional Water Board during inspections and upon request by the Regional Water Board, any reports or records required by the Order including those required under this MRP.

D. Signature and Submittal.

Each Annual Report and Noncompliance Report shall be signed by the Discharger or a duly authorized representative and shall contain the following statement:

> *"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this report and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*

Reports shall be submitted to:

North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
Phone (707) 576-2220
Fax (707) 523-0135

III. SUMMARY OF REQUIRED REPORTS AND NOTICES

In summary, the discharger must complete the following in accordance with the Waiver:

A. **Notice of Intent (NOI)** – see Attachment A. The NOI must be submitted to the Regional Water Board by April 30, 2012, or upon notification from the Regional Water Board to comply with this Order.

B. **Water Quality Plan (WQP**) – see MRP Appendix 1. The WQP must be prepared and implemented by November 30, 2012. A copy of the WQP must

be kept on the dairy site and made available for review by Regional Water Board staff during inspections.

C. **Nutrient Management Plan (NMP)** – see MRP Appendix 2. The NMP must be prepared and implemented at the time of Waiver enrollment for Large CAFOs (Concentrated Animal Feeding Operations with 700 or more dairy cows, milking + dry). Smaller dairies are encouraged to develop and implement a NMP, but it is not required. A copy of the NMP must be kept on the dairy site and made available for review by Regional Water Board staff during inspections.

D. **Annual Report** – see MRP Appendix 3. The Discharger shall submit an Annual Report to the Regional Water Board by November 30 of each year starting in 2013. The reporting period is November 1 through October 31. A copy of each Annual Report shall be kept at the facility and be made available for review by Regional Water Board staff during inspections.

E. **Noncompliance Report** – Any spills, discharges, or other noncompliance must be reported and corrected as described in this MRP.

F. **Extension Request** - The dairy operator may request an extension to MRP deadlines by written request to the Executive Officer of the Regional Water Board at least 30 days prior to the deadlines. This request must include a description of incomplete plan elements, an alternative date of compliance, and assurance of water quality protection in the interim. A letter from the Regional Water Board will be issued granting or denying the request. A staff inspection may be necessary.

Ordered by: _____
Catherine Kuhlman
Executive Officer

January 19, 2012

APPENDIX
1. Water Quality Plan (WQP)
2. Nutrient Management Plan (NMP)
3. Annual Report

Appendix 1

Conditional Waiver of Waste Discharge Requirements

Monitoring and Reporting Program
Order No. R1-2012-0003

for Existing Cow Dairies
In the North Coast Region

Water Quality Plan

Purpose
Owners and operators of dairies (hereinafter identified as "Discharger") seeking coverage under the Conditional Waiver of Waste Discharge Requirements for existing cow dairies in the North Coast Region, Order No. R1-2012-0003 (the Waiver), are required to prepare and implement a Water Quality Plan (WQP). The purpose of the WQP is to help the Discharger ensure that their dairy is designed, constructed, operated, and maintained so that contaminants generated by the dairy are managed to prevent adverse impacts to the quality of surface water and groundwater.

Due Date
The WQP must be prepared and submitted to the Regional Water Board by November 30 , 2012. The Regional Water Board Executive Officer may give special TMDL offset dairy projects an alternative schedule for submittal.

Format
The WQP is developed by the Discharger by printing and completing the following questionnaire. If the Discharger needs more room for any answers, additional sheets can be attached and responses numbered to correspond to the question.

Water Quality Plan

I. General Information :

A. Basic Dairy Information:

1. Dairy Name:_____
2. Address:_____
3. Contact person: _____
4. Phone number: _____
5. E-mail address: _____
6. Current number of dairy cows (milking + dry): _____
7. Current other cattle: _____
8. Maximum number of dairy cows (milking + dry) the dairy is designed for:_____
9. Maximum number of other dairy cattle the dairy is designed for: _____
   _____
10. Acres Owned _____ List APNs: _____
    _____
11. Acres Leased _____ List APNs: _____
    _____
12. Acres that receive manure and/or process water: _____
13. Average annual amount of manure applied (indicate pounds, tons, cubic yards, or other units): _____
14. Average annual amount of process water applied (indicate gallons, 1,000 of gallons, or acre-inches):_____
15. Average amount of manure transferred offsite (show units): _____
16. Average amount of process water transferred offsite: (show units):_____
    _____
17. Describe offsite location(s) that receive manure and/or process water:
    _____
    _____
    _____

B. **Map**: Please attach legible map(s) identifying the following items where applicable. You may need to use a full-page satellite map (e.g. Bing, Google, or similar) and one or more additional maps at appropriate scales:

1. Perimeter of land owned
2. Perimeter of land leased
3. Buildings with use identified
4. Manure ponds with perimeter outline of drainage area into pond
5. Production area perimeter: (areas where livestock feeding and housing areas, feed storage areas, manure and process water storage areas, milk barn, chemical storage areas and manure storage areas are located).
6. Surface watercourses and conveyances (ditches, piping)
7. Extent of subsurface tile drainage system and associated discharge points
8. Pumping facilities
9. Flow meters
10. Underground pipelines used for transporting process water
11. Wells and type (domestic, agricultural, industrial, or monitoring well)
12. Drainage controls (berms, levees, and/or ponds) used for tailwater and stormwater
13. Arrows showing direction of flows
14. Stormwater discharge point(s)
15. Permanent pens / fences
16. Crop fields (identified by name or number)
17. Pastures (identified by name or number)
18. Any septic tanks and leachfields on the property
19. Map legend

C. **Waste Discharge:** The discharge of process water or stormwater containing manure to surface waters or groundwater is prohibited under the Waiver.

Has the dairy had a discharge of manure or process water to surface or groundwater? Yes ☐ No ☐
If yes, describe and provide dates: _____
_____
_____
_____

II. *Water Quality Requirements*

Based on Statewide Water Quality Regulations for Confined Animal Facilities (CAFs) California Code of Regulations (CCR) Title 27, Division 2, Subdivision 1:

A. 22561 General Standards for Surface Water. *The discharger shall prevent animals at a confined animal facility from entering any surface water within the confined area.*

Do cows have access to any surface water in the production area? Yes ☐ No ☐
Describe all measures (i.e. BMPs) taken to prevent access of cows to surface waters in the production area: _____

_____

_____

Describe all measures taken to protect water quality at livestock crossings in the production area: _____

_____

_____

B. 22562(a) Design Storm (for Run-On/Run-Off Control)*-Confined animal facilities shall be designed and constructed to retain all facility wastewater* (i.e., process water) *generated, together with all precipitation on, and drainage through, manured areas during a 25-year, 24-hour storm.*

Is your facility designed and operated to meet this code? Yes ☐ No ☐

Please complete the following table for manure ponds:

Pond name/number	Dimensions (feet) Length x width x depth	Volume, cubic feet (exclude 2 feet freeboard)
	Total volume:	

Explain how do you determine compliance with the requirement to retain process water during the 25-year 24-hour storm: _____

_____

_____

Are the manure ponds inspected to ensure design capacity and liner integrity by November 1 of each year? Yes ☐ No ☐

Contingency Plan: If pond storage does not meet minimum standards, the dairy facility must have a Contingency Plan that describes how the excess precipitation and runoff that is generated during the higher than normal precipitation will be managed.

Please describe any Contingency Plan in place to manage precipitation and runoff generated during higher than normal precipitation (attach additional sheets, if necessary):

_____

_____

_____

C. 22562(b) Manured Area Run-On /Exclusion *-- All precipitation and surface drainage outside of manured areas, including that collected from roofed areas, and runoff from tributary areas during the storm events described in* [Section 22562] *(a), shall be diverted away from manured areas, unless such drainage is fully retained. RWQCBs can waive application of such requirements only in specific instances where upstream land use changes have altered surface drainage patterns such that retention of flood flows is not feasible.*

California State requirements mandate that all precipitation and surface drainage outside of the manure area(s), be diverted away from manured areas unless it is fully retained.

Please describe how your facility is designed and operated to divert run-on or run-off from manured areas or how it is managed to fully contain the drainage:_____

_____

_____

D. 22562(c)Design Storm (for Flood Protection)

Retention ponds and manured areas at confined animal facilities in operation on or before November 27, 1984, shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows.

Are your manure ponds protected from a 20-year peak stream flows, and if so, how? Yes □ No □ _____

_____

Existing facilities that were in operation on or before November 27 1984, and that are protected against 100-year peak stream flows, must continue to provide such protection. Facilities, or portions thereof, which begin operating after November 27, 1984, shall be protected against 100-year peak stream flows.

1. For dairies beginning operation after November 27, 1984, please explain how your dairy is designed and operated to protect from inundation or washout from 100-year peak stream flows:

   _____

   _____

   _____

2. If your dairy is required to have protection from 100-year peak stream flows, have the retention ponds and manured facilities at your dairy ever been inundated from any stream during a 100-year peak stream flow? Yes ☐ No ☐ If yes, explain:

   _____
   _____
   _____

3. Is the dairy production area located within a 100-year floodplain?
   Yes ☐ No ☐
   If yes, please explain how your facility is designed and operated to protect from inundation or washout from 100-year peak stream flows: _____
   _____
   _____

E. ***22562 (d) Retention Pond Design –*** *Retention ponds shall be lined with, or underlain by, soils which contain at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability.*

1. Do any retention ponds have a liner made from artificial material? Yes☐ No☐
   If so, which pond(s) and what is the material? _____
   _____
   _____

1. Are your ponds underlain by soils which contain at least 10 percent clay and not more than 10 percent gravel? Yes ☐ No ☐ if yes, how was this determined? _____
2. Have you conducted a permeability test on any retention ponds? Yes☐ No☐
   If so, which ponds and what was the result?_____
   _____
   _____

F. ***22562 Land Application of Process Waters*** – This conditional Waiver authorizes the application of manure and process waters to land only if such application is in accordance with the conditions of the Waiver. Absent an NPDES permit for discharge to surface waters, the only allowable discharge is to wastewater treatment facilities approved by the Regional Water Board.

G. **22563 Reasonable Soil Amendment Rate** – Manure and process water may not be applied to land at a dairy facility solely for disposal. Application of manure and process water to croplands shall be at rates which are reasonable for the crop, soil, climate, special local situations management systems, and type of manure. Please provide information on application practices as requested in the following sections:

For facilities with a prepared Nutrient Management Plan:

The purpose of a Nutrient Management Plan (NMP) is to identify the management practices used to minimize adverse impacts to surface water and groundwater from runoff and leaching from land application areas. An NMP is specific for a particular dairy and considers crops, soil types, climate, and local conditions for all nutrients, and non-nutrient salts applied to each field. The NMP must be updated in response to changing conditions and when the NMP is not effective in preventing periodic discharges of manure or process water

Federal regulations identify dairies with 700 or more mature dairy cattle as a "large CAFO" (40 CFR §§ 122.23(e), and 122.42(e)(1)(vi)–(ix)) and require such dairies to implement an NMP if they discharge stormwater from cropland without an NPDES permit. A written NMP is encouraged and recommended for all dairies.

1. Does your dairy have a written NMP? Yes □ No □ If so, what specialists helped you prepare the NMP? _____
   _____
   _____

   If your facility has a written NMP, the most current version should be kept at the dairy and available for review by Regional Water Board staff during inspections.

2. Do you implement the written NMP? Yes ☐ No ☐

For facilities without a prepared NMP:

1. Is manure and process water generated at your facility applied to cropland at rates that are agronomically sound for the crop, soil, climate, special local situations, management system, and manure and process water characteristics? Yes ☐ No ☐. Please explain:_____
   _____
   _____

2. If you do nutrient budget calculation for the dairy, please explain below how you complete these calculations: _____
   _____
   _____
   _____

3. Have you ever had your dairy's manure, process water, or cropland soil tested for nutrient content? Yes ☐ No ☐

If yes, what were the results and how were they used? _____
_____
_____
_____

H. 22563 Run-Off & Percolation *– Land application of process water to cropland shall not result in surface runoff from the cropland and shall be managed to minimize percolation to ground water.*

1. To reduce the potential for stormwater runoff to transport contaminants to waters of the United States, is nutrient application and associated irrigation completed by November 1st of each year? Yes ☐ No ☐

2. Describe the measures taken to minimize percolation to groundwater and to avoid a discharge of pollutants to groundwater: _____
_____
_____
_____

I. 22564 Management of Manured Areas
Manured areas (corrals, manure solids storage areas, etc.) *shall be managed to minimize infiltration of water into underlying soils.*

1. Is runoff from manured areas prevented from entering surface waters?
   Yes ☐ No ☐

   Are manured areas lined, and if so, how?
   _____
   _____
   _____

2. Describe the measures taken to minimize infiltration of manure-laden water into underlying soils within manured areas, corrals, pens, and animal housing areas: _____
_____
_____
_____

3. Describe the measures taken to separate or divert stormwater from contacting manured areas, corrals, pens, and animal housing areas: _____
_____
_____
_____

IIIII. Best Management Practices

Best management practices (BMPs) are any practices or measures used to protect surface and groundwater. Please provide the following information for BMPs not identified previously in this document which are used at your dairy:

A. Erosion Control: Describe all measures taken to minimize erosion and the discharge of soil particles to surface water: _____

B. Stream Protection: Please list all stream water quality protection measures throughout the dairy: _____

C. Nuisance Control: Describe all measures taken to prevent nuisance from manure ponds. Include measures to control: odors, breeding of mosquitoes, damage from burrowing animals, damage from equipment during removal of solids, embankment settling, erosion seepage, excess weeds, algae, and other vegetation that could compromise the needed capacity or proper functioning of your manure pond and/or degrade water quality: _____

D. Groundwater Protection: What practices are employed at the dairy facility to protect groundwater from contamination at wellheads, sinkholes, and tile drains?

E. Dead Animal Disposal: What actions are taken at your dairy to ensure the protection of surface water and groundwater from the disposal of dead animals?

F. Chemical Disposal: What BMPs and chemical handling methods do you use to prevent impacts to surface water and groundwater? _____

G. Petroleum Products: The California Aboveground Petroleum Storage Act requires owners or operators to take specific actions to prevent spills: http://www.calepa.ca.gov/cupa/aboveground/
Daily inspections and secondary containment may be required. Spill reporting to the city, county, and state agencies is required. Are you aware of this Act and is your facility compliant? Yes ☐ No ☐.

H. Other BMPs: Describe BMPs, not discussed above, as used to:

1) Prevent waste discharges to surface waters: _____

2) Prevent waste discharges to groundwater: _____

I. Spill or Noncompliance Reporting: Are you aware of spill and noncompliance reporting requirements in the Monitoring and Reporting Plan? Yes ☐ No ☐. Are you in compliance with those reporting requirements? Yes ☐ No ☐.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this report and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Printed Name: _____

Signature: _____ Date: _____

Reports shall be submitted by November 30, 2012 to:

North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
Phone (707) 576-2220
Fax (707) 523-0135

Appendix 2

Conditional Waiver of Waste Discharge Requirements
Monitoring and Reporting
Order No. R1-2012-0003

Nutrient Management Plan (NMP)

Dischargers seeking coverage under the Conditional Waiver, who have over 700 mature dairy cows, and apply manure and/or dairy process water to land as a soil amendment or source of nutrients, are required to develop and implement a Nutrient Management Plan (NMP). Preparation and implementation of a NMP is encouraged and recommended but not required for dairies with less than 700 mature dairy cows. 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, Appendix 3) for submittal by November 30 each year.

A. NMP Purpose and Implementation

The purpose of the NMP is to identify the management practices used at the dairy to minimize adverse impacts to surface water and groundwater from runoff and leaching from land application areas. The NMP is specific for a particular dairy and considers crops, soil types, climate, local conditions, all sources of nutrients, and the non-nutrient salts applied to each field. All nutrient applications to land at identified dairies, such as Large CAFOs, including applications to pasture, must be made in accordance with an NMP. The NMP must be updated in response to changing conditions and the results of monitoring.

For dairies covered by the Order, the NMP must be 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, or a 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.

Dairies that are large Concentrated Animal Feeding Operations (CAFOs) that are not point sources, meet the conditions of the Conditional Waiver, and want to enroll under this Order must be implementing a NMP upon enrollment if they will discharge stormwater from cropland where manure, litter, or process wastewater has been applied.

The most current version of the NMP must be kept at the dairy and must be made available for review by Regional Water Board staff during inspections. The NMP shall be submitted to the Regional Water Board upon request.

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: 1) site-specific information becomes available to replace default values used in the initial NMP, 2) changes in operating practices result in the production of nutrients that are not addressed by the NMP, 3) crops will be grown that are not covered by the NMP, 4) there is a change of 15% or more in the acreage used for land application, or 5) 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.

B. 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:

1. The collection, treatment, storage, or application of manure or process water shall not result in:
   a. degradation of surface water or groundwater except as allowed by the Order,
   b. contamination or pollution of surface water or groundwater, or
   c. a condition of nuisance (as defined by the California Water Code Section 13050).

   This requirement applies to any degradation products or any constituents of soil mobilized by the interactions between applied materials and soil or soil biota.

2. The application of manure and process water shall not violate any applicable local, state, or federal laws or regulations or contribute to an exceedence of any applicable water quality objective in the Basin Plan or of any applicable state or federal water quality criteria.

3. The discharge of process water to surface water is prohibited.

4. The discharge of stormwater to surface water from land where manure or process water has been applied is prohibited unless all applications to land are in accordance with a NMP.

5. The application of manure and process water to land shall be in accordance with a NMP.

C. Contents of NMP

The NMP must contain the following components:

1. **Contact Information:** The name, mailing address, and phone number of (a) the dairy owner, (b) the dairy operator (if different), and (c) any specialist who participated in the development of the NMP.

2. **Specific dates:** The date that the NMP was completed, the date that the NMP will be implemented, and the dates of anticipated NMP reviews and revisions.

3. **Description of the dairy:** The following information must be included:
   a. name of the dairy;
   b. the dairy address or, if no street number, the street and nearest cross street;
   c. design maximum cow population by type (milk cows, dry cows, heifers, calves);
   d. current cow population by type;
   e. Assessor's Parcel Number(s) for the dairy and all associated land;
   f. for each Assessor's Parcel, the total acreage; the acreage used for crops including pasture, the acreage used for application of (a) manure, (b) process water, or (c) both;
   g. the crop rotation, if any, within each land application area.

4. **Maps:** One or more United States Geological Survey quadrangle maps or equivalent showing the location of the dairy and all areas under the Discharger's control, whether owned, rented, or leased, to which manure or process water may be applied. If suitable, an aerial photo with appropriate notations may be utilized. The map(s), aerial photos, and/or drawings (see next section) should show the locations of all the following that exist at the dairy: 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, a point locating any septic systems, all water quality sampling points, and a 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.

5. **Drawings:** A scaled drawing, aerial photo or topographic map that shows the production area including the livestock feeding and housing areas, feed storage areas, manure and process water storage areas, milk barn, chemical storage areas, and waste storage areas. These drawings, photos or maps may also be used to show the locations of features listed above under "Maps."

6. **Nutrient Budget Calculations:** The NMP must include calculations showing all sources of nutrients used by the facility and demonstrating that nutrients are applied at rates that are protective of water quality. These calculations must be reviewed annually and updated if there are any significant changes in conditions or practices at the dairy that necessitate changes in the NMP. These calculations may be reviewed by Regional Water Board staff during inspections. The details of the nutrient budget are discussed below in Section D.

7. **Land application practices and water quality protection:** The NMP must describe the methods by which manure and process water is applied to land application areas, and describe the BMPs that are implemented to protect surface water and groundwater.

8. **Sampling and analysis program:** The NMP must describe the associated sampling program including sampling locations, sampling frequency, sample collection and preservation procedures. The NMP must identify the analytical laboratory utilized and the analyses to be conducted for soil, manure, soil amendments, process water, irrigation water, plant tissue, etc. If that information is in the MRP, the NMP can reference that MRP. The laboratory utilized must be certified, or if not certified it must be approved by the Regional Water Board staff. 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

D. Nutrient Budget Calculations

The Discharger shall develop a nutrient budget that establishes the nutrient application practices for each crop in each land application area. The initial nutrient budget may be based on default values if site-specific information is not available[1]. Subsequent nutrient budgets shall be based on site-specific analytical data for soil, manure, process water, irrigation water, other sources of nutrients, and plant tissue. The nutrient budget shall include the following:

1. The rate of nutrient applications (e.g., pounds of nitrogen per acre) based on default values or site-specific analytical data in order to meet each crop's needs for nitrogen and phosphorus without exceeding the application rates that will protect water quality. The rate of nutrient applications shall be based on realistic yield goals for each crop in each land application area. For new crops or varieties, industry yield expectations may be used until site-specific yield information is available.

2. The quantity of manure, soil amendments, and/or process water to be applied shall be based on the nutrient content of the material, the characteristics of the material (e.g., the amount of organic nitrogen), and the site conditions (e.g., if a pasture is not grazed or mowed, the amount of residual nutrients in soil will be higher). In determining the quantity to apply, the Discharger shall consider all sources of nutrients including irrigation water, commercial fertilizers, and previous crops.

3. The timing of applications shall be based on seasonal and climatic conditions, the growth stage of the crop, and the availability of water. The anticipated maximum time between land application events (i.e., the storage period) shall be used to determine the needed storage capacity for manure and process water.

4. The method of manure, soil amendment, and process water application for each crop in each land application area shall be based on site-specific conditions and shall minimize the discharge of sediments, nutrients, and salts from the application area.

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[1] Crop nutrient needs may be based on recommendations from the University of California or the Western Fertilizer Handbook (9th Edition). Acceptable default values for the nutrient content of materials include values recognized by the American Society of Agricultural and Biological Engineers (ASABE), the Natural Resources Conservation Service (NRCS), and/or the University of California that accurately estimate. The nutrient content of commercial fertilizers shall be California Department of Food and Agriculture published values.

Nutrient application rates shall not approach a site's maximum ability to contain one or more nutrients through soil adsorption. If the nutrient budget shows that the nutrients generated by the dairy exceed the amount needed by crops in the land application area, then the Discharger must implement management practices that will prevent impacts to surface water or groundwater due to application of excess nutrients. Such practices may include obtaining access to additional land for nutrient application, exporting manure, or reducing the number of cows at the dairy.

Supplementary commercial fertilizers and/or soil amendments may be added when the application of nutrients contained in manure and process water alone is not sufficient to meet the crop needs. Specific nutrients are discussed below.

Nitrogen: Total Ammonia Nitrogen (NH_4) and Total Nitrogen will be measured at the dairy through water and soil sampling. Nitrogen application rates shall not result in total nitrogen applied to the land application areas exceeding the nitrogen application in each location as recommended by UCCE, NRCS, other local information, or 1.4 times the anticipated nitrogen removal in forage. If application of total nitrogen to a land application area exceeds the budgeted application rate for the specific land application area, the Discharger shall either revise the nutrient budget to prevent such exceedence in the future or demonstrate and record that the application rates have not contaminated surface or ground water. Applications of nitrogen exceeding the initial recommendations are allowable if the following conditions are met:

1. Soil Plant Available Nitrogen (PAN) testing or plant tissue testing has been conducted and indicates that additional nitrogen is required to obtain crop yield estimates typical for the soils and other local conditions;
2. The amount of additional nitrogen applied is based on the soil or tissue testing and is consistent with UCCE or NRCS guidelines or written recommendations from a nutrient management specialist or Certified Crop Advisor;
3. The form, timing, and method of application facilitates timely nitrogen availability to the crop; and
4. Records are maintained documenting the need for the additional applications.

Phosphorus and Potassium: Application of these nutrients at agronomic levels, along with reasonable erosion control and runoff control measures, will normally prevent water quality problems. In some instances, other best management practices may need to be included in the NMP.

E. Land Application Practices

Application of manure and process water to croplands shall be at rates which are reasonable for the crop, soil, climate, special local situations, management systems, and type of manure. The timing of nutrient application must correspond as closely as possible with plant nutrient uptake characteristics, while considering cropping system limitations, weather and climatic conditions, and land application area accessibility. Land application areas that receive dry manure and process water shall be managed to minimize erosion.

The NMP must identify all surface water or potential conduits to surface water that are within 100 feet of any land application area and take appropriate actions to protect water quality. The following sections discuss practices that reduce the potential for pollutants from land application areas to reach surface water.

1. **Setbacks, vegetated buffers, and other alternatives to protect surface water:** A setback is a specified distance that separates land application areas from surface water or a potential conduit to surface water, and where manure and dairy process water may not be applied, but where crops may be grown. A vegetated buffer is a relatively narrow (approximately 35 feet), permanent strip of dense perennial vegetation where no crops are grown and which is established perpendicular to the dominant slope of a land application area for the purposes of slowing water runoff, enhancing water infiltration, trapping pollutants bound to sediment, and minimizing the risk of pollutants reaching surface waters. A berm is another alternative to prevent runoff from reaching surface water.

   Manure and process water shall not be applied within a 100-foot setback to any down-gradient surface water unless a 35-foot wide vegetated buffer or physical barrier (i.e., a berm) is substituted for the 100-foot setback; or an alternative conservation practice or field-specific condition that provides pollutant reductions equivalent to or better than achieved by the 100-foot setback. Any alternative practice utilized must be described in the NMP.

   Animals must be separated from surface waters by a 35-foot wide vegetated buffer unless an alternative practice demonstrating equal or better water quality protection is utilized and described in the NMP. Alternative practices may include rocked crossings, fences, bridges, culverts, engineered slopes, etc. Vegetation along flowing watercourses shall be protected from overgrazing to maintain natural water temperatures and protect stream banks. Flash grazing of the vegetated buffer, as an alternative practice, must be described in the NMP.

Practices for establishing and maintaining vegetated buffers include:

- limiting removal of vegetation within the buffers and promoting plant growth in the buffer;
- maintaining the recommended height for the plant species;
- establishing plant density for adequate filtering capacity;
- improving soil conditions to reduce erosion and increase infiltration;
- preventing erosion channels and gullies from forming.

2. **Avoiding conduits that can transport pollutants:** Manure and process water shall not be applied closer than 100 feet to open tile line intake structures, sinkholes, or well heads unless the NMP contains a statement from a professional explaining that an alternative practice will be as protective as the 100-foot separation. This professional must be a registered or certified engineering geologist or hydrogeologist, or a responsible professional with experience in manure containment and structural facility specification. Documentation from initial wellhead construction may be acceptable upon review by Regional Water Board staff.

3. **Wetland Protection**: Wetlands are waters of the state and are protected under state regulations by provisions of the California Water Code. Wetlands are also protected as waters of the U.S. under the federal Clean Water Act. The beneficial use of wetlands must be protected against water quality degradation. Wetlands containing standing water shall be protected through dairy cow exclusion and the exclusion of manure or process water application.

F. Sampling, Analysis, and Calculations

Soil, manure, soil amendments, process water, irrigation water, and plant tissue shall be monitored, sampled, and analyzed. The analytical results shall be used during the development, implementation, and revision of the NMP.

Samples of soils and crop tissues shall be analyzed for available phosphorus at least once every 5 years. Sampling results shall be reviewed to verify that phosphorus levels do not exceed limits needed to maintain acceptable crop yields and prevent adverse impacts to water quality. If this review determines that a buildup of phosphorus threatens water quality, application rates must be decreased until the situation is corrected.

Nutrient credit from previous legume crops shall be determined by methods acceptable to the UCCE, the NRCS, Resource Conservation District, or a technical service provider that is NRCS certified in developing NMP.

G. Field Risk Assessment

Dischargers are required to sample discharges of stormwater from land application areas to surface water, as detailed in the MRP. The analytical results for those samples shall be used by the Discharger 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.

Land application areas must be managed to prevent contamination of crops grown for human consumption. When crops grown for human consumption without processing (berries, nut trees, etc.) are grown near to land application areas, the Discharger shall take appropriate actions to prevent movement of pathogens that could cause adverse impacts to human health.

H. Record-Keeping and NMP Review

The Discharger must maintain records for each land application area and use the records as a basis for revisions to the NMP. The NMP must be available for Regional Water Board staff review during inspections.

APPENDIX 3

Conditional Waiver of Waste Discharge Requirements
Monitoring and Reporting
Order No. R1-2012-0003

Annual Report

Report Date: _____
Month / day / year

For Dairies Covered by Order No. R1-2012-0003
Conditional Waiver of Waste Discharge Requirements
For Existing Cow Dairies

Due November 30 each year; reporting for preceeding 12 month period (November 1 through October 31).

Facility Information

Facility:_____ Address: _____
No. Street City Zip

Operator:_____ Address:_____

Phone: ( )_____ E-mail:_____

Property owner:_____ Address:_____

Phone: ( )_____ E-mail:_____

Current # of mature dairy cows (milking + dry): _____

Current # of other dairy cattle: _____

1. **In the previous year, have changes been made to the facility Water Quality Plan? Yes ☐ No ☐ If yes, please attach explanation.** _____
2. **In the previous year, has a Nutrient Management Plan been prepared or revised for your facility?** _____ _____ **Yes ☐ No ☐ if yes, please attach explanation.**
3. **Has the dairy had a manure or process water discharge to surface or groundwater in the past year? Yes ☐ No ☐**
4. **If so, where and how was the problem resolved?** _____ _____ _____
5. **Please answer the following questions pertaining to facility conditions and actions taken within the previous year to comply with conditions of the Waiver:**

"N/A" means that the subject is not applicable to the facility covered by this report)

A. Prevent animals from entering any surface water within confinement areas:
("Surface water" means waters of the United States or any tributary to a water of the United States)

Are barriers used to keep animals out of surface waters?	❑ Yes	❑ No	❑ N/A	Are watercourse crossings designed and maintained to protect water quality?	❑ Yes	❑ No	❑ N/A
Are feed sites located away from surface waters?	❑ Yes	❑ No	❑ N/A				

Description of deficiencies (if any) or additional information:

B. Divert clean stormwater runoff away from manured areas (including heavily used pastures)							
Do buildings have effective gutters?	❑ Yes	❑ No	❑ N/A	Is stormwater that contacts manured areas and feed storage areas contained in holding ponds?	❑ Yes	❑ No	❑ N/A
Is guttered water diverted away from manured areas?	❑ Yes	❑ No	❑ N/A	Is clean stormwater runoff managed separate from manure and process water?	❑ Yes	❑ No	❑ N/A
Is guttered water contained in holding ponds?	❑ Yes	❑ No	❑ N/A	Are diversion ditches functional and properly maintained to protect surface waters?	❑ Yes	❑ No	❑ N/A
Description of Deficiencies (if any) or Additional Information:							

C. Is the dairy designed to retain all manure and process water generated at the facility, including all runoff from manured areas produced during a 25-year, 24-hour storm? Are wastes managed and contained to protect surface water and groundwater?

Material to be contained	Yes	No	N/A	Material to be contained	Yes	No	N/A
All manure solids	❑	❑	❑				
Runoff from solids storage areas	❑	❑	❑	Waste milk	❑	❑	❑
Runoff from corrals that contain manure	❑	❑	❑	Veterinary waste	❑	❑	❑
Milk barn washwater	❑	❑	❑	Hazardous wastes (pesticides, etc.)	❑	❑	❑
Runoff and leachate from silage	❑	❑	❑				

Description of deficiencies (if any) or additional information:

System component & condition	Yes	No N/A	**System component & condition**	Yes	No N/A
Ponds are designed to contain all process water and stormwater runoff during a 25-year, 24-hour storm or have a Contingency Plan fully protective of surface water quality?	❑	❑	Design calculations are available for manure storage system?	❑	❑

Above-ground soil and clay lined manure ponds have a least 2 ft. freeboard? In-ground manure ponds have at least 1 foot of freeboard?	❑	❑	The facility has a solids separation system?	❑	❑
Ponds are cleaned annually to maintain capacity and check liner integrity?	❑	❑	The pumping system is maintained?	❑	❑

Are dead animals handled in a manner protective of surface water and groundwater quality? Yes ❑ No ❑

Description of Deficiencies (if any) or Additional Information:

E. Photo Documentation per Monitoring and Reporting Plan

Please attach photo documentation of compliance with required preseason pollution prevention measures. Photos of newly implemented pollution prevention measures to protect surface and groundwater shall be submitted. Examples of pollution prevention includes cleaning of manure ponds, stormwater separation from manured areas, scraping of manured areas, covering manure piles, compost, and feed storage areas, impermeable ground covering in these storage areas to prevent groundwater contamination, stream zone protection, and any other best management practices or control measures for water quality protection. The objective of the Annual Report is to demonstrate that the dairy is ready for the wet season.			
Photo Documentation of Preseason BMPs Attached	❑ Yes	❑ No	

F. Water Quality Sampling

The information below summarizes the water quality sampling requirements, as presented in the Monitoring and Reporting Program (MRP).

Surface Water Sampling

Surface watercourses that flow through the dairy property, including the production area, cropland, or pastures, must be sampled using grab samples at the point where watercourses enter and leave the property. Alternatively, if surface waters flow adjacent to the property but not through the property, and are located such that they could be impacted by activities at the dairy, the grab samples shall be collected upstream and downstream of the areas closest to the dairy property. Sampling shall take place during or directly following each of three (3) major storm events of one (1) inch or more per 24 hours, during the rainy season, beginning in the winter of 2012/2013. Three (3) measurements of electrical conductivity taken three (3) minutes apart shall be recorded during each sampling event at each location. Ammonia nitrogen, pH, and temperature shall be collected once at each sampling location for each sampling event during or following storm events described in this section above.

Electrical Conductivity (EC)	Mmhos
Total Ammonia Nitrogen (NH_4)	mg/L
pH	
Temperature	^{o}C

Is this dairy in a group monitoring plan?_____If so, which group? _____

Groundwater Well Sampling

Representative wells currently used and located at the dairy, including domestic and agricultural supply wells, shall be sampled four (4) times total, approximately six (6) months apart. A sample must be collected in: (1) Fall 2012, (2) Spring 2013, (3) Fall 2013, and (4) Spring 2014. One (1) sample from each well shall be tested for the following parameters:

Constituent	Units
Nitrate	mg/L
Fecal Coliform Bacteria	MPN/100mL

Has all surface and ground water quality sampling been completed as described in the Monitoring and Reporting Plan? Yes ❑ No ❑

Have all water quality results from the past 12 months been attached? Yes ❑ No ❑

The MRP requires recording of visual observations, such as changes in stream color or turbidity at the time of sampling. Please include those observations below or in an attachment.

G. Best Management Practices

(In this section please describe the condition and effectiveness of management measures not previously described elsewhere in this Annual Report. Please attach additional sheets if more space is needed to fully answer these topics)

Erosion Control: Please describe all other measures not previously described, that to prevent and minimize the occurrence of erosion and discharge of manure, feed, waste, and soil particles from the dairy to surface or groundwaters:

_____

_____

Nuisance Control: Please describe all new measures taken to prevent nuisances. Include odors, breeding mosquitoes, damage from burrowing animals, damage from equipment during removal of solids, embankment settling, erosion seepage, excess weeds, algae, and other vegetation that could compromise the needed capacity or proper functioning of your facility and/or degrade water quality:

_____

_____

Groundwater Protection: Describe new measures taken to protect groundwater from contamination at wellheads, sinkholes, and tile drains:

_____

_____

Describe all new measures taken to protect water quality at livestock crossings outside the production area:

_____

_____

Are the liners of the manure ponds protective of water quality (free of weeds, animal burrows, and cracks that may disturb the liner)? Please describe:

_____

Do the manure ponds have sufficient storage capacity prior to the rainy season as required in the Order?

Describe the method used to make this determination:_____

_____

_____

_____

For facilities without a prepared Nutrient Management Plan:

In the past year, was manure and process water generated at your facility applied to pastures, fields or crop lands at rates that are agronomically sound for the crop, soil, climate, special local situations, management system, and manure/wastewater characteristics? Yes ❑ No ❑

If yes, please explain:

Please describe the measures taken to avoid surface runoff of manure constituents from the dairy's land application areas:

Describe the measures taken to separate or divert stormwater from contacting manured areas, corrals, pens, and animal housing areas:

Describe the measures taken to minimize infiltration of manure-laden water into underlying soils within manured areas, corrals, pens, and animal housing areas:

H. Summary

Has all required monitoring been conducted?	Yes ☐	No ☐
Have all required reports been submitted to the Regional Water Board?	Yes ☐	No ☐
Does facility meet Regional Water Board Waiver criteria?	Yes ☐	No ☐

Reports shall be submitted by November 30 of each year (starting in 2013) to:

North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
Phone (707) 576-2220
Fax (707) 523-0135

I. Certification of Report Preparer

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this report and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____ _____

Printed Name Title

_____ _____

Signature Month / day / year