

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**MONITORING AND REPORTING PROGRAM ORDER R5-2017-0000**

**GENERAL ORDER  
FOR  
CONFINED BOVINE FEEDING OPERATIONS**

**INTRODUCTION**

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code (CWC) section 13267 which authorizes the California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) to require preparation and submittal of technical and monitoring reports. This MRP establishes specific surface and groundwater monitoring, reporting, and electronic data deliverable requirements for owners and/or operators (Dischargers) subject to and enrolled under Waste Discharge Requirements General Order for Confined Bovine Feeding Operations, Order R5-2017-0000 (hereafter referred to as the “Bovine General Order” or “Order”) as Full Coverage Operations, and lesser requirements for Dischargers enrolled as Limited Time Operations. Limited Population Operations shall comply with this MRP as directed to do so by the Executive Officer. The requirements of this MRP are necessary to monitor Discharger compliance with the provisions of the Order and determine whether State waters receiving discharges from Confined Bovine Feeding Operations are meeting water quality objectives. Additional discussion and a rationale for this MRP’s requirements are provided in the Information Sheet to the Order.

For Full Coverage Operations, this MRP includes Monitoring, Record-Keeping, and Reporting requirements. Monitoring requirements include monitoring of discharges of manure and/or wastewater, storm water, tailwater, surface water, and groundwater.

Monitoring requirements also include monitoring of nutrients applied to, and removed from, land application areas in order for the Discharger to develop and implement a Nutrient Management Plan for cropland controlled by the Discharger, which will minimize leaching of nutrients and salts to groundwater and transport of these constituents to surface water.

In addition, monitoring requirements include periodic visual inspections of Confined Bovine Feeding Operations conducted by or on behalf of the Discharger to confirm that they are being operated and maintained to ensure continued compliance with the Order.

This MRP requires the Discharger to keep and maintain records for five years of the monitoring activities for the production and land application areas and to prepare and submit reports containing the results of specified monitoring as indicated below.

All monitoring must begin immediately upon issuance of a Notice of Applicability (NOA) to the Discharger by the Executive Officer. Note that some types of events require that

a report be submitted to the Central Valley Water Board within 24 hours (see Reporting Requirements, section A).

Monitoring requirements for surface waters and groundwater will be periodically reassessed to determine if changes should be made to better represent discharges to waters of the State from Confined Bovine Feeding Operations. The monitoring schedule will also be reassessed so that constituents are monitored during application and/or release timeframes when constituents of concern are most likely to affect water quality. The Discharger shall not implement any changes to this MRP unless the Central Valley Water Board or the Executive Officer issues a revised MRP; the Central Valley Water Board or the Executive Officer may revise this MRP as necessary.

The Discharger shall conduct monitoring, record-keeping, and reporting as specified below.

Confined Bovine Feeding Operations qualifying as Limited Time Operations shall monitor discharges of wastewater to ponds as required in Table 3 of this MRP and keep records of the export destinations of manure as required under the Record-Keeping Requirements section of this MRP. Limited Time Operations shall submit annual reports as required under Reporting Requirements section B, Annual Reporting, of this MRP. Limited Time Operations shall monitor groundwater as directed by the Executive Officer.

## **GENERAL PROVISIONS**

Monitoring data collected to meet the requirements of the Order must be collected and analyzed in a manner that assures the quality of the data.

All regulatory documents, submissions, materials, data, monitoring reports, and correspondence shall be converted to a searchable Portable Document Format (PDF) and submitted electronically to the State Water Resources Control Board's Internet-accessible database system (Geotracker database). The exception is the Notice of Intent, which may be submitted by email or mail to the Central Valley Water Board.

Dischargers or their representatives need to create a Geotracker user account. Instructions for setting up an account and the process of claiming a site, formatting and uploading data, and other technical information can be found under the "ESI Overview" and "Getting Started" sections at [http://www.swrcb.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](http://www.swrcb.ca.gov/water_issues/programs/ust/electronic_submittal/)

Monitoring data and correspondence need to be in searchable Portable Document Format (PDF). Documents must be less than 100 MB to be uploaded to the Geotracker database. If not, PDF file size reduction tools should be used to reduce the size of files larger than 100 MB.

The Executive Officer may require that monitoring data be submitted in a format suitable for uploading to an electronic database specified by the Executive Officer.

## **MONITORING REQUIREMENTS**

### **A. General Monitoring Requirements**

1. Dischargers must follow sampling and analytical procedures approved by the Executive Officer. Approved sampling and analytical procedures will be posted on the Central Valley Water Board's web site. A Discharger may submit alternative procedures for consideration, but must receive written approval from the Executive Officer before using them. If monitoring consistently shows no significant variation of a constituent concentration or parameter, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.
2. If conditions are not safe for surface water sampling, the Discharger must provide documentation why samples could not be collected and analyzed (e.g., photo documentation, flow measurements/estimates). For example, the Discharger may be unable to collect samples during dangerous weather conditions (such as local flooding, high winds, tornados, electrical storms, etc.). However, once the dangerous conditions have passed, the Discharger shall collect a sample of the discharge or, if the discharge has ceased, from the next discharge event.
3. The Discharger shall comply with all the "Requirements Specifically for Monitoring Programs and Monitoring Reports" as specified in the Standard Provisions and Reporting Requirements.
4. 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.
5. All samples collected shall be representative of the volume and nature of the material being sampled.
6. All sample containers shall be labeled with a unique identifier (e.g., field/well number) and records maintained to show the time and date of collection as well as the person collecting the sample, the sample location, and method of sample collection and preservation.

7. The Discharger shall ensure that all sample analyses are conducted by a laboratory certified for such analyses by the Environmental Laboratory Accreditation Program (ELAP) of the Division of Drinking Water, State Water Resources Control Board. The laboratory analyses shall be conducted in accordance with Title 40 Code of Federal Regulations Part 136 (*Guidelines Establishing Test Procedures for the Analysis of Pollutants*) or other test methods approved by the Executive Officer.
8. 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.
9. All samples submitted to a laboratory for analyses shall be identified in a properly completed and signed chain of custody form that should be obtained prior to sample collection from the analytical laboratory to be used.
10. Field test instruments used for pH, electrical conductivity, temperature, turbidity, ammonia nitrogen, un-ionized ammonia nitrogen, and dissolved oxygen may be used provided:
  - a. The operator is trained in the proper use and maintenance of the instruments;
  - b. The instruments are calibrated prior to each monitoring event per manufacturer instructions and at the recommended frequency during sampling; and
  - c. Instruments are serviced per the manufacturer's recommended frequency.

## **B. Visual Monitoring**

The Discharger shall conduct and record the inspections specified in Table 1 below and maintain records of the results on-site for a period of five years.

**Table 1. INSPECTIONS**

***Production Area***

Weekly during the wet season (1 October to 31 May) and monthly between 1 June and 30 September:

Inspect all feed, bedding, and waste storage areas (solid manure and liquid waste); document any conditions or changes that could result in discharges to surface water and/or from property under control of the Discharger.

Note whether freeboard within each liquid waste storage structure is less than, equal to, or greater than the minimum required (two feet for above ground ponds and one foot for below ground ponds) and document any issues with flow meters, berm integrity, cracking, slumping, erosion, excess vegetation, animal burrows, or seepage.

Inspect the animal confinement area(s), raw materials storage area(s), and solid waste storage area(s) for proper drainage to the wastewater management system

Within 12 hours after the end of each major storm event (one inch of precipitation within 24 hours):  
Visual inspections of wastewater containment structures for discharge, freeboard, berm integrity, cracking, slumping erosion, and seepage.

Monthly on the 1<sup>st</sup> day of each month:

Photograph each pond showing the height of wastewater relative to the depth marker and the current freeboard on that date. Photograph each flow meter, clearly showing the volume reading. All photos shall be dated and maintained as part of the Discharger's record.

Annually:

Inspect aboveground pipes and/or pumps that are part of the wastewater management system for leakage, and repair as necessary.

***Land Application Areas***

Prior to each wastewater application:

Inspect the land application area and note the condition of land application berms including rodent holes, piping, and bank erosion. Verify that any field valves are correctly set to preclude off-property or accidental discharges of wastewater.

Daily when wastewater is being applied:

Inspect the land application area and note the condition of land application berms including rodent holes, piping, and bank erosion; the presence (or lack) of field saturation, ponding, erosion, runoff (including tailwater discharges from the end of fields, pipes, or other conveyances), and nuisance conditions; and the conditions of any vegetated filter strips/buffers or alternative conservation practices.

***Composting Operation***

Quarterly:

Inspect working surfaces, berms, ditches, perimeter, erosion control best management practices, and any other operational surfaces for cracking, subsidence, ponding on working surfaces or within ditches, effectiveness of erosion control, maintenance activities, and evidence of any uncontrolled water or wastewater leaving or entering the operation area. Photograph observed and corrected deficiencies.

| <b>Table 1. INSPECTIONS</b>   |
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| <p><b><i>Composting Operation (cont.)</i></b></p> <p><u>Annually, prior to the wet season:</u><br/>                     Survey the composting operation to confirm that all containment structures are prepared for the pending wet season. Conduct the survey no later than 31 August and complete any necessary construction, maintenance, or repairs by 1 October. Include this information in the Annual Monitoring and Maintenance Report (see Reporting Requirements, section B).</p> <p><u>After Major Storm Events (a minimum of one inch of precipitation within 24 hours):</u><br/>                     Inspect all precipitation, diversion, and drainage facilities for damage within 7 days following major storm events. Necessary repairs shall be completed within 30 days of the inspection. Report any damage and subsequent repairs, including photographs of the problem and repairs, in the Annual Monitoring and Maintenance Report portion of the Annual Report.</p> |

**C. Nutrient Monitoring**

The Discharger shall monitor wastewater, manure, and plant tissue produced at the facility, soil in each land application area, and irrigation water used on each land application area under control of the Discharger for the constituents and at the frequency as specified in Table 2 below. This information is to be used to develop and implement the Nutrient Management Plan at the individual land application areas and at the facility as a whole. The Discharger shall collect and analyze a sufficient number of samples to characterize the mass of nutrients applied to the land application area.

Land application areas (cropland) associated with the Confined Bovine Feeding Operation that do not receive wastewater may be enrolled in the Irrigated Lands Regulatory Program (ILRP) in lieu of enrollment under the Bovine General Order. The nutrient monitoring requirements of this section do not apply to cropland enrolled in the ILRP program.

Land application areas associated with the Confined Bovine Feeding Operation that do receive wastewater are subject to the requirements of the Bovine General Order and shall comply with the nutrient monitoring requirements of this section. If the land application areas are subject to the Bovine General Order and a crop is grown on the areas, then the plant tissue, soil, and irrigation water monitoring outlined in Table 2 are required regardless of whether or not wastewater or manure is applied.

| <b>Table 2. NUTRIENT MONITORING</b>   |
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| <p><b><i>Wastewater – Dischargers must collect samples of wastewater that are representative of the amount of nitrogen being applied to the land application area(s). If there is variation in the amount of nitrogen in the wastewater depending on where or when samples are collected, then that variation must be accounted for in the sampling procedure. The sample should be collected at a point such that the sample represents the nutrient content of the wastewater as it is being applied to the land application area(s). Typically, this will be at a sample point in line with and near a flow meter. For every calendar quarter in which wastewater is</i></b></p> |

| <b>Table 2. NUTRIENT MONITORING</b>   |
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| <p><b><i>applied, wastewater is to be sampled at least once and the following analyses performed. The volume needs to be based on accurate measurements using a calibrated flow meter with a totalizer, or another equivalently accurate method.</i></b></p> <p><b><i>At a minimum, the Discharger shall do the following:</i></b></p> <p><u>Each application:</u><br/>                     Record the volume (gallons or acre-inches) and date of wastewater application to each land application area.</p> <p><u>Quarterly during one application event:</u><br/>                     Laboratory analyses for nitrate-nitrogen (only when wastewater pond is aerated), ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids.</p> <p><u>Once every two years (biennially):</u><br/>                     Laboratory analyses for general minerals (calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, and chloride).</p>   |
| <p><b><i>Solid Manure that is land applied (including manure that is exported for land application):</i></b></p> <p><u>One separate sample from each source of manure (corrals, separator, etc.) collected twice per year at the time of each land application event or export to a grower for land application:</u><br/>                     Laboratory analyses for total Kjeldahl nitrogen, total phosphorus, total potassium, and percent moisture.</p> <p><u>One separate sample from each source of manure (corrals, separator, etc.), collected once every two years (biennially):</u><br/>                     Laboratory analyses for calcium, magnesium, sodium, potassium, and chloride.</p> <p><u>Each application to each land application area:</u><br/>                     Record the percent moisture and total weight (tons) applied.</p> <p><u>Each offsite export of manure:</u><br/>                     Record the percent moisture and total weight (tons) exported.</p> <p><u>Annually:</u><br/>                     Calculate the total dry weight (tons) of manure applied annually to each land application area and the total dry weight (tons) of manure exported offsite.</p> |
| <p><b><i>Plant Tissue – required of land application areas that are not enrolled in the Irrigated Lands Regulatory Program.</i></b></p> <p><u>At harvest:</u><br/>                     Record the percent moisture and total weight (tons) of harvested material removed from each land application area.</p> <p>Laboratory analyses, including chain of custody forms, for total nitrogen, and percent moisture. Chain of custody forms must indicate the length of time between sample collection and sample analysis.</p> <p>If it is anticipated that crop nutrient requirements will be significantly in excess of 1.4 times crop uptake, additional plant tissue testing should be conducted to indicate the amount of additional</p>   |

| <b>Table 2. NUTRIENT MONITORING</b>  |
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| nitrogen required to obtain a crop yield typical for the soils and other local conditions.   |
| <p><b>Soil</b></p> <p><u>Once every 5 years from each land application area (may be distributed over a 5-year period by sampling 20% of the land application areas annually):</u><br/>                     Laboratory analyses for soluble phosphorus</p> <p><u>Annually, before the planting of the fall crop, from each land application area:</u><br/>                     Laboratory analysis for total nitrogen</p>   |
| <p><b>Irrigation Water<sup>1</sup></b></p> <p><u>Each irrigation event for each land application area:</u><br/>                     Record volume (gallons or acre-inches) and source (well or canal) of irrigation water applied and dates applied. For irrigation wells with total nitrogen levels higher than 10 ppm, the volume needs to be based on accurate measurements using a calibrated flow meter with a totalizer or another equivalently accurate method.</p> <p>Use of well water flow rates based on agricultural pump efficiency tests performed by a certified pump tester annually, combined with electric energy consumption data from an electrical utility, may be proposed as an equivalently accurate method for volume calculations of groundwater supply wells only.</p> <p><u>One irrigation event during each irrigation season during actual irrigation events:</u><br/>                     For each irrigation water source (well and canal):<br/>                     Total dissolved solids, and total nitrogen.<sup>2</sup><br/>                     Data collected to satisfy the groundwater monitoring requirements (below) can be used to satisfy this requirement.</p> |

<sup>1</sup> The Discharger shall monitor irrigation water (from each water well source and canal) that is used on all land application areas.

<sup>2</sup> In lieu of sampling the irrigation water, the Discharger may provide equivalent data from the local irrigation district.

**D. Monitoring of Surface Discharges or Runoff**

Dischargers who do not land apply wastewater and therefore are not required to sample wastewater in accordance with Table 2 above shall conduct one-time monitoring of discharges of manure, wastewater, or storm water that are retained in ponds for the constituents specified in Table 3, “Discharges of Wastewater to Ponds”, below. This requirement does not apply to Limited Population Operations.

Dischargers shall monitor any discharges of manure, wastewater, storm water, or irrigation tailwater that have the potential to reach surface waters of the State from the production area or land application area for the constituents and at the frequencies specified in the applicable sections of Table 3 below.

All Dischargers operating land application areas with the potential to impact surface waters of the State shall comply with additional surface water



monitoring requirements specified in **MRP Attachment B** either through individual surface monitoring or by participation in an Executive Officer-approved Joint Monitoring Program, as laid out in **MRP Attachment B**.

| <b>Table 3. DISCHARGE MONITORING</b>   |
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| <p><b><i>Discharges of Wastewater to Ponds</i></b></p> <p><u>Once, following the first precipitation event that creates a volume of wastewater in the pond capable of producing a representative sample:</u><br/>                     Laboratory analyses for nitrate-nitrogen, ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids.</p> <p><u>Once, following the first precipitation event that creates a volume of wastewater in the pond capable of producing a representative sample:</u><br/>                     Laboratory analyses for general minerals (calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, and chloride).</p> <p>Additional sampling of discharges of wastewater to ponds may be required by the Executive Officer.</p>  |
| <p><b><i>Discharges of Manure or Wastewater from the Production Area or Land Application Area – Prohibited Discharge, Priority Reporting of Significant Event (PROSE)<sup>1</sup> Report Required</i></b></p> <p><u>Daily during each discharge:</u><br/>                     Record date, time, approximate volume (gallons) or weight (tons), duration, location, source, and ultimate destination of the discharge.</p> <p>Field measurements of the discharge for electrical conductivity, temperature, and pH.</p> <p>Laboratory analyses of the discharge for nitrate-nitrogen, ammonia-nitrogen, un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, total dissolved solids, and total and fecal coliform.</p> <p><u>Daily during each discharge to surface water:</u><br/> <u>For surface water upstream<sup>2</sup> and downstream<sup>3</sup> of the discharge:</u><br/>                     Field measurements for electrical conductivity, temperature, dissolved oxygen, and pH.</p> <p>Laboratory analyses for nitrate-nitrogen, ammonia-nitrogen, un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, total dissolved solids, and total and fecal coliform.</p> |
| <p><b><i>Storm Water Discharges to Surface Water from the Production Area<sup>4</sup></i></b><br/> <b><i>- Prohibited Discharge, PROSE Report Required</i></b></p> <p><u>Daily during each discharge to surface water:</u><br/>                     Record date, time, approximate volume, duration, location, source, and ultimate destination of the discharge.</p> <p><u>For (1) the discharge and surface water (2) upstream and (3) downstream of the discharge:</u><br/>                     Field measurements of electrical conductivity, dissolved oxygen, temperature, and pH.</p>   |

Laboratory analyses for nitrate-nitrogen, ammonia-nitrogen, un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, turbidity, total phosphorus, total potassium, total dissolved solids, and total and fecal coliform.

***Storm Water Discharges to Surface Water from Each Land Application Area<sup>4</sup> - Some Discharges Require Testing Before Release***

First storm event of the wet season<sup>5</sup> and during the peak storm season<sup>6</sup> (typically February) each year from one third of the land application areas<sup>7</sup> with the land application areas sampled rotated each year<sup>8</sup>:

Record date, time, approximate volume, duration, location, and ultimate destination of the discharge.

Field measurements of the discharge for electrical conductivity, temperature, pH, and ammonia-nitrogen.

Using the temperature, pH, and ammonia-nitrogen, determine the un-ionized ammonia-nitrogen.

**In accordance with section E.10 of the Bovine General Order (Land Application Area Specifications), storm water discharges shall be retained on-property if the un-ionized ammonia-nitrogen concentration in the storm water is calculated to be at or above 0.04 mg/l. If the un-ionized ammonia nitrogen concentration is calculated to be between 0.02 and 0.039 mg/l, the storm water should only be released if other mitigations such as high freshwater flows are present.**

If the calculated un-ionized ammonia-nitrogen concentration in the storm water is at or above 0.02 mg/l, the Discharger shall conduct laboratory analyses of the discharge for nitrate-nitrogen, ammonia-nitrogen, total phosphorus, and total and fecal coliform. The Discharger shall submit an analysis to the Executive Officer within 30 days of the testing event describing the reason for the elevated un-ionized ammonia concentration and proposed changes to land application area management practices to ensure limitation of un-ionized ammonia in future discharges.

***Tailwater Discharges to Surface Water from Land Application Areas<sup>9</sup> - All Discharges Require Testing Before Release***

Each discharge from each land application area:

Field measurements of discharge for electrical conductivity, temperature, pH, and ammonia-nitrogen.

Using temperature, pH, and ammonia-nitrogen, determine the un-ionized ammonia-nitrogen.

**In accordance with section E.10 of the Bovine General Order (Land Application Area Specifications), tailwater discharges shall be retained on-property if the un-ionized ammonia-nitrogen concentration in the tailwater is calculated to be at or above 0.04 mg/l. If the un-ionized ammonia nitrogen concentration is calculated to be between 0.02 and 0.039 mg/l, the storm water should only be released if other mitigations such as high freshwater flows are present.**

If the calculated un-ionized ammonia nitrogen concentration in the tailwater is at or above 0.02 mg/l, the Discharger shall conduct laboratory analyses for nitrate-nitrogen, ammonia-nitrogen, total phosphorus, and total and fecal coliform. The Discharger shall submit an analysis to the Executive Officer within 30 days of the testing event describing the reason for the elevated un-ionized ammonia concentration and proposed changes to land application area management practices to ensure limitation of un-ionized ammonia in future discharges.

- <sup>1</sup> See Reporting Requirements, Section A, of this Monitoring and Reporting Program regarding PROSE Reports.
- <sup>2</sup> Upstream samples shall be taken just far enough upstream so as not to be influenced by the discharge.
- <sup>3</sup> Downstream samples shall be taken just far enough downstream where the discharge is blended with the receiving water but not influenced by dilution flows or other discharges.
- <sup>4</sup> Sample locations must be chosen such that the samples are representative of the quality and quantity of storm water discharged.
- <sup>5</sup> This sample shall be taken during business hours from the first storm event of the season that produces significant storm water discharge such as would occur during continuous storm water runoff for a minimum of one hour, or intermittent storm water runoff for a minimum of three hours in a 12-hour period.
- <sup>6</sup> This sample shall be taken during business hours from a storm event that produces significant storm water discharge and that is preceded by at least three days of dry weather. The sample shall be taken during the first hour of the discharge.
- <sup>7</sup> One land application area shall be sampled for Dischargers that have one to three land application areas, two land application areas shall be sampled for Dischargers that have four to six land application areas, etc.
- <sup>8</sup> The Discharger may propose in the annual storm water report to reduce the constituents and/or sampling frequency of storm water discharges to surface water from any land application area based on the previous year's data (see Storm Water Reporting section below).
- <sup>9</sup> Sample locations must be chosen such that the samples are representative of the quality and quantity of tailwater discharged.

## E. Groundwater Monitoring

1. Beginning within six months of issuance of an NOA, the Discharger shall annually sample each domestic and agricultural supply well for two (2) years, and then once every five (5) years, to characterize existing groundwater quality. This monitoring shall be conducted during the same time each year for the constituents specified in Table 4 below.
2. The Discharger shall sample each subsurface (tile) drainage system present in the land application area(s). This monitoring shall be conducted at the frequency and for the parameters specified in Table 4 below.
3. The Discharger shall comply with the additional groundwater monitoring requirements specified in **MRP Attachment A** either through individual groundwater monitoring or by participation in an Executive Officer-approved Representative Monitoring Program for Confined Bovine Feeding Operations, as laid out in **MRP Attachment A**. Limited Time and Limited Population Operations shall monitor groundwater as directed by the Executive Officer.
4. All monitoring wells and supply wells (domestic and agricultural) must be identified with a unique identification (name/number) for the purposes of sample collection and data interpretation.
5. Groundwater samples from domestic wells shall be collected from the tap nearest to the pressure tank (and before the pressure tank if possible) 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.
6. 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.

7. Samples from subsurface (tile) drains shall be collected at the discharge point into a canal or drain.

| <b>Table 4. GROUNDWATER MONITORING</b>  |
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| <p><b><i>Domestic and Agricultural Supply Wells</i></b></p> <p><u>Annually for two years and then once every five years (may be distributed over a 5-year period by sampling 20% of the wells annually):</u><br/>Field measurements of electrical conductivity and ammonium nitrogen<sup>1</sup>.</p> <p>Laboratory analyses for nitrate-nitrogen and general minerals (calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, chloride, and total dissolved solids).</p> <p><b><i>Subsurface (Tile) Drainage System</i></b></p> <p><u>Annually during the irrigation season:</u><br/>Field Measurements of electrical conductivity and ammonium nitrogen<sup>1</sup></p> <p>Laboratory analyses of nitrate-nitrogen, total phosphorus, and total dissolved solids</p> |

<sup>1</sup> If field measurement indicates the presence of ammonium nitrogen, the Discharger shall collect a sample for laboratory analysis of ammonium nitrogen.

## **RECORD-KEEPING REQUIREMENTS**

Dischargers shall maintain on-site for a period of five years from the date they are created all information as follows (Owners must maintain their own copies of this information). If wastewater, manure, or commercial fertilizer is not applied to land application areas owned or controlled by the Discharger, requirements A, C and D, below, do not apply to the Discharger.

Limited Time Operations shall maintain Pond Testing records as required in Table 3 above and Tracking Manifest forms as described under section E below.

- A. All information necessary to document implementation and management of the Nutrient Management Plan, including the information described in Items B through F below;
- B. All records for the production area including:
  1. Records documenting the inspections required under the Monitoring Requirements above;
  2. Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements above. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction;

3. Records of the date, time, and estimated volume of any overflow or bypass of the wastewater storage or conveyance structures;
4. Records of mortality management and practices, including documentation of proper disposal (e.g., manifests, invoices, receipts, or other documents demonstrating who transported the mortalities and where they were taken for disposal);
5. Steps and dates when action is taken to correct unauthorized releases as reported in accordance with Priority Reporting of Significant Events below;
6. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5;
7. Testing schedule and results of periodic testing of all mechanical backflow devices; and
8. Records of all measures, observations, and actions that are taken through implementing the Operation and Maintenance Plan.

C. All records for the land application area including:

1. Expected and actual crop yields;
2. Identification of crop, acreage, and dates of planting and harvest for each field;
3. Dates, locations, and approximate weight and moisture content of manure applied to each field;
4. Dates, locations, and volume of wastewater and irrigation water applied to each field;
5. Whether precipitation occurred, or standing water was present, at the time of manure and wastewater applications and for 24 hours prior to and following applications;
6. Dates, locations, and test methods for soil, manure, wastewater, irrigation water, and plant tissue sampling;
7. Results from manure, wastewater, irrigation water, soil, plant tissue, discharge (including tailwater), and storm water sampling;
8. Explanation for the basis for determining manure or wastewater application rates, as provided in the Technical Standards for Nutrient Management established by the Order (**Attachment C** of the Bovine General Order);
9. Calculations showing the nitrogen, total phosphorus, and total potassium to be applied to each field from all nutrient sources including manure, wastewater, and chemical fertilizers to each crop in each land application area (Nutrient Budget);

10. Amount of nitrogen, phosphorus, and potassium actually applied to each field from all nutrient sources, including manure, wastewater, and chemical fertilizer, to each crop in each land application area for each application, including documentation of the total amounts applied (Nutrient Application Calculations);
  11. Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements above. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction; and
  12. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5.
- D. A copy of the Discharger's site-specific Nutrient Management Plan;
- E. Tracking Manifest forms (**Attachment D** of the Bovine General Order) for off-site exports of manure or wastewater which includes information on the manure hauler, destination of the manure, dates hauled, amount hauled, and certification; and
- F. All analyses of manure, wastewater, irrigation water, wastewater in ponds, soil, plant tissue, discharges (including tailwater discharges), surface water, storm water, subsurface (tile) drainage, and groundwater.

## REPORTING REQUIREMENTS

### A. Priority Reporting of Significant Events (PROSE Report) (Prompt Action Required)

The Discharger shall report any noncompliance that endangers human health or the environment or any noncompliance with Prohibitions A.1 through A.5 and A.8 through A.12 of the Bovine General Order, **within 24 hours** of becoming aware of its occurrence. The incident shall be reported to the Central Valley Water Board office, local environmental health department, and to the California Emergency Management Agency (CalEMA). During non-business hours, the Discharger shall leave a message on the Central Valley Water Board's voice mail. The message shall include the time, date, place, and nature of the noncompliance, the name and number of the reporting person, and shall be recorded in writing by the Discharger. CalEMA is operational 24 hours a day. A written report shall be submitted to the Central Valley Water Board office **within two weeks** of the Discharger becoming aware of the incident. The report shall contain a description of the noncompliance, its causes, duration, and the actual or anticipated time for achieving compliance. The report shall include complete details of the steps that the Discharger has taken or intends to take, in order to prevent recurrence. All intentional or accidental spills shall be reported as required by this provision. The written submission shall contain:

1. The approximate date, time, and location of the noncompliance including a description of the ultimate destination of any unauthorized discharge and the flow path of such discharge to a receiving water body;
2. A description of the noncompliance and its cause;
3. The flow rate, volume, and duration of any discharge involved in the noncompliance;
4. The amount of precipitation (in inches) the day of any discharge and for each of the seven days preceding the discharge;
5. A description (location; date and time collected; field measurements of pH, temperature, dissolved oxygen and electrical conductivity; sample identification; date submitted to laboratory; analyses requested) of noncompliance discharge samples and/or surface water samples taken to comply with the Monitoring Requirements above for *Discharges of Manure or Wastewater from the Production Area or Land Application Area* and *Storm Water Discharges to Surface Water from the Production Area* (Table 3);
6. The period of noncompliance, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
7. A time schedule and a plan to implement corrective actions necessary to prevent the recurrence of such noncompliance.
8. The laboratory analyses of the noncompliance discharge sample and/or upstream and downstream surface water samples shall be submitted to the Central Valley Water Board office within 45 days of the discharge.

## **B. Annual Reporting**

An annual monitoring report is due by **1 July of each year**. It will consist of a General Section, a Groundwater Reporting Section (including an appropriate Groundwater Monitoring Report prepared in accordance with **MRP Attachment A**), a Storm Water and Tailwater Reporting Section (including an appropriate Surface Water Monitoring Report prepared in accordance with **MRP Attachment B**) and, if a composting operation is on-site, an Annual Monitoring and Maintenance Report for the Composting Operation as described below. Once the (groundwater) Summary Report (for individual Dischargers) or the (groundwater) Summary Representative Monitoring Report (for representative monitoring groups) has been approved, an Annual Implementation Report (see **MRP Attachment A**) shall be included in the Annual Report.

The annual report for Limited Time Operations shall contain items 1, 2, 12, and

14 of the General Section below, and a signed certification that the facility continues to meet the criteria to qualify as a Limited Time Operation. If the facility includes a composting operation, an Annual Monitoring and Maintenance Report for the Composting Operation must be submitted. A single annual report may be submitted for multiple Limited Time Operations managed by the same Discharger provided that information for items 1, 2, 12, and 14 are provided for each facility.

### **General Section**

The General Section of the annual report shall include all the information as specified below. This section of the annual report shall cover information on crops harvested during the previous calendar year, including nutrients applied and nutrients removed in plant tissue. If a crop spans two calendar years (planted in one year and harvested in the following year), all the data regarding nutrients and irrigation water applied to that crop should be included in the annual report for the year in which the crop was harvested.

1. Identification of the beginning and end dates of the annual reporting period;
2. Monthly maximum and monthly average number and type of animals, whether in open confinement or housed under roof, during the reporting period;
3. Total amount of manure (tons) and wastewater (gallons or acre-inches) generated by the facility during the annual reporting period; results of biennial sampling of solid manure for calcium, magnesium, sodium, and chloride; results of biennial sampling of wastewater for general minerals; and a calculation of the:
  - a. Total Kjeldahl nitrogen, total phosphorus, and total potassium of the solid manure; and
  - b. Total nitrate nitrogen, ammonia-nitrogen, Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids of the wastewater;
4. Total amount of manure (tons) and wastewater (gallons or acre-inches) applied to each land application area during the annual reporting period and a calculation of the total nitrogen, total phosphorus, and total potassium applied to each land application area;
5. Calculation of the ratio of total nitrogen applied and total nitrogen removed in the harvested portion (nitrogen uptake) for each crop in each land application area. If the applied/removed ratio exceeds 1.4 for a given crop, provide an explanation for the exceedance and a discussion of steps that have been taken to limit such an exceedance in the future;



6. Total amount of manure (tons) and wastewater (gallons or acre-inches) transferred to other persons by the facility during the annual reporting period; a calculation of the total nitrogen, total phosphorus, and total potassium in the transferred material;
7. Total number of acres and the Assessor Parcel Numbers for all land application areas that were not used for application of manure or wastewater during the reporting period;
8. Total number of acres and the Assessor Parcel Numbers of properties that were used for land application of manure and wastewater during the annual reporting period;
9. Summary of all manure and wastewater discharges from the production area to surface water or to land areas (land application areas or otherwise) when not in accordance with the facility's Nutrient Management Plan that occurred during the annual reporting period, including date, time, location, and approximate volume; a map showing discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;
10. Summary of all wastewater discharges from the land application area to surface water that have occurred during the annual reporting period, including the date, time, approximate volume, location, and source of discharge (i.e., wastewater or blended wastewater); a map showing the discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;
11. A statement indicating if the Nutrient Management Plan has been updated and whether the current version of the facility's Nutrient Management Plan was developed or approved by a certified nutrient management specialist as specified in **Attachment C** of the Bovine General Order;
12. Copies of all manure/ wastewater tracking manifests for the reporting period;
13. For the first annual report submitted, copies of all written agreements with each third party that receives solid manure or wastewater from the Discharger (if any). For subsequent annual reports, a statement indicating if there were any changes to the third party agreements. If there were any changes, submit copies of all new or revised written agreements;
14. A description of mortality management practices;
15. Dates and results of testing, and description of any corrective actions taken, for all mechanical backflow prevention devices;

16. Tabulated analytical data for samples of manure, wastewater, irrigation water, soil, and plant tissue, and chain of custody forms for plant tissue samples. The data shall be tabulated to clearly show sample dates, constituents analyzed, constituent concentrations, and detection limits;
17. Results of the Record-Keeping Requirements for the production and land application areas specified in Record-Keeping Requirements B.2, B.3, C.1, C.2, C.3, C.4, C.5, C.10, and C.12; and
18. Composting Operation Information: a summary of all monitoring and maintenance activities performed and adverse conditions noted since the prior reporting period with respect to all berms, ditches, working surfaces, and monitoring systems, and a certification that the composting operation complies with the requirements of the Order and applicable portions of the MRP.

### **Groundwater Reporting Section**

Groundwater monitoring results shall be included with the annual reports.

1. Dischargers that monitor domestic and agricultural wells and subsurface (tile) drainage systems shall submit information on the location of sample collection and all field and laboratory data, including all laboratory analyses (including chain-of-custody forms and laboratory QA/QC results).
2. Annual Monitoring Report: Dischargers that have individual monitoring well systems shall include all laboratory analyses (including chain of custody forms and laboratory QA/QC results) and tabular and graphical summaries of the monitoring data. Data shall be tabulated to clearly show the sample dates, constituents analyzed, constituent concentrations, detection limits, depth to groundwater, and groundwater elevations. Graphical summaries of groundwater gradients and flow directions shall also be included. Each groundwater monitoring report shall include a summary data table of all historical and current groundwater elevations and analytical results. The groundwater monitoring reports shall be certified by a California registered professional as specified in General Reporting Requirements C.9 of the Standard Provisions and Reporting Requirements of Order R5-2017-0000.

### **Storm Water and Tailwater Reporting Section**

Storm water and tailwater monitoring results will be included in the annual report. If applicable, the section shall include the Annual Surface Water Monitoring Report prepared in accordance with **MRP Attachment B**. The report shall include a map showing all sample locations for all land application areas; rationale for all sampling locations; a discussion of how flow measurements were made; the results (including the laboratory analyses, chain of custody forms, and laboratory QA/QC results) of all

samples of storm water and tailwater; whether, based on the sampling results, the storm water or tailwater was released from the land application area; and any modifications made to the facility or sampling plan in response to pollutants detected in storm water or tailwater. The annual report must also include documentation if no significant discharge of storm water or tailwater occurred from the land application area(s) or if it was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions.

### **Annual Monitoring and Maintenance Report for the Composting Operation**

If the Confined Bovine Feeding Operation includes a composting operation, include an annual monitoring and maintenance report section in the annual report. The report shall include the following information:

1. The results of quarterly inspections, including dates of the inspections, type and cause of any deficiency/non-compliance observed, including a map and photographs, and a description of corrective actions undertaken or planned, including the date and time of repairs and measures taken to prevent a recurrence of the problem;
2. The results of the annual survey conducted prior to the wet season, including date of the inspection, type and cause of any deficiency/non-compliance observed, including a map and photographs, and a description of corrective actions undertaken or planned, including the date and time of repairs and measures taken to prevent a recurrence of the problem; and
3. The results of inspections conducted after major storm events, including dates of the inspections, type and cause of any deficiency/non-compliance observed, including a map and photographs, and a description of corrective actions undertaken or planned, including the date and time of repairs and measures taken to prevent a recurrence of the problem.

### **C. General Reporting Requirements**

1. The results of any monitoring conducted more frequently than required at the locations specified herein shall be reported to the Central Valley Water Board.
2. Each report shall be signed by the Discharger or a duly authorized representative as specified in the General Reporting Requirements C.7 of the Standard Provisions and Reporting Requirements of Order R5-2017-0000, 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 document 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.”*

3. Each report shall include the name of the preparer of the report and the preparer's contact information.

ORDERED BY:

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PAMELA C. CREEDON, Executive Officer

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ORDER ADOPTION DATE