

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

INTRODUCTION

This Information Sheet provides background knowledge relative to the Waste Discharge Requirements General Order for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities, Order No. R5-2011-XXXX (Order) and discusses the various requirements of the Order.

This Order applies to the owners of land upon which a centralized dairy manure anaerobic digester or a centralized dairy manure co-digester facility is located, the owners and/or operators of the centralized dairy manure anaerobic digester or centralized dairy manure co-digester, the owners and operators of land application areas to which digester wastes are applied, and the owners and operators of dairies that receive digester wastes from a centralized digester except when the dairy receives less waste than it provide to the digester, and the waste is of the same kind (solid or liquid) and character. These individuals or entities are hereinafter referred to as Discharger(s).

All Dischargers regulated by this Order are required to:

- Submit a Notice of Intent (NOI) and a Facility Information Report (FIR) prior to receiving a Notice of Applicability (NOA) for this Order;
- Comply with all the provisions of this Order;
- Submit a Nutrient Management Plan (NMP);
- Submit a Waste Management Plan;
- Submit a Salt Minimization Plan (SMP);
- Monitor imported co-digester feedstock, and solid and liquid wastes produced by the dairy and digester/co-digester facilities;
- Keep records for dairy and digester/co-digester production areas and land application areas;
- Monitor groundwater quality or document that the Discharger has applied to or joined an approved Representative Monitoring Program;
- Implement best practicable treatment or control of wastes produced by the dairy or digester facilities; and
- Submit annual monitoring reports

This Order will serve as general Waste Discharge Requirements (WDRs) for discharges of manure, digestate (digester solids produced by the digestion process), digester generated soil amendments, and process wastewater from centralized dairy manure

digester or co-digester facilities. This Order is not a National Pollutant Discharge Elimination System (NPDES) Permit and does not authorize discharges of pollutants to surface water that are subject to NPDES permit requirements of the Clean Water Act. This Information Sheet is a part of the Order.

TYPICAL DIGESTER AND CO-DIGESTER FACILITY DESCRIPTION

Anaerobic digestion is the biological decomposition of organic matter in the absence of molecular oxygen. The anaerobic digestion process results in the production of biogas, process wastewater, and residual solid digestate. The anaerobic digestion process occurs naturally in marshes, wetlands and is the principal decomposition process in landfills.

Dairy manure, when used as a feedstock in anaerobic digesters or co-digesters, can provide a significant amount of renewable energy in the form of biogas. This Order encompasses both manure digestion and co-digestion processes, which differ according to feedstock.

Dairy manure digesters and dairy co-digesters generally consist of one of three basic types of digester systems, although many variations and gradations between these basic types exist. Each of the three basic digester types is described below.

- **ANAEROBIC COVERED LAGOONS**

Ambient-temperature covered lagoons are covered ponds, where the waste stream enters one end (influent) and the digested effluent is removed at the other end. The lagoons are covered by an impermeable cover that captures the biogas generated by anaerobic digester. Covered lagoons are not typically heated and operate at ambient ground temperatures. The anaerobic digestion reaction and biogas production rates are affected by seasonal temperature variations.

- **PLUG-FLOW DIGESTER**

Plug-flow digesters typically consist of unmixed, rectangular tanks that are normally heated to mesophilic temperatures (68° to 105° F) by a hot water piping system within the digester. The rate of bacterial growth and anaerobic digestion is faster with higher temperatures than at ambient conditions. This anaerobic digester system is typically used to digest thick waste with a relatively high solids concentration.

- **COMPLETE MIX DIGESTER**

Complete mix anaerobic digesters typically consist of aboveground tanks where the organic waste stream is heated to mesophilic or thermophilic (110° to 160° F) temperatures and continuously or intermittently mixed by mechanical, gas, or liquid circulation mixers. Complete mix digester systems accommodate a wide-range of solids concentrations and can handle sand and silts in the waste stream since the mixing prevents stratification.

In general, liquid manure and liquid supplemental feedstock will be added to the digester typically on a daily basis. The digestion process will take 21 to 38 days. Digester effluent is removed from the digester daily and passes through a separator. Separated effluent liquid is recycled to a mixing area or conveyed to the wastewater retention system for holding until it is applied to cropland. Separated digestate is stored and may be used as animal bedding, or digester generated soil amendment.

Biogas produced during the digestion process is typically extracted and conveyed to a gas treatment system (hereafter "biogas scrubber") where water, carbon dioxide and hydrogen sulfide (wastes) are typically removed prior to use (either in a natural gas pipeline or onsite). The biological reaction within the biogas scrubber removes sulfur from the gas stream. Some biogas scrubber systems may be flushed with fresh water to remove the accumulated effluent from the reaction surfaces. The chemical characteristics of a wastewater generated by this type of biogas scrubber (Microgy Inc., co-digester in Texas) are summarized in the following table.

Characteristics of Biogas Scrubber Effluent

Constituent	Value	Constituent	Value
Calcium	ND	pH	1.4 pH units
Chloride	ND	Phosphorus (total)	33 ppm
Copper	1 ppm	Potassium (total)	ND
Iron	ND	Sodium	6 ppm
Magnesium	27 ppm	Sulfur	1,403 ppm
Manganese	2 ppm	Total Dissolved Solids	4,000 mg/L
Total Kjeldahl Nitrogen	159 mg/L	Zinc	1 ppm
mg/L – milligrams per liter		ppm – parts per million	
Source of data: Midwest Laboratories, Inc., Report of Analysis, Ref Lab # 212718, Report Number 07-297-5046 dated 10/30/07			

The example of liquid biogas scrubber effluent is mostly sulfuric acid (H₂SO₄). Sulfuric acid is commonly used in the western United States to treat high pH soils. For many years, farmers have used sulfuric acid as a soil amendment to reclaim sodic soils and soils with high lime (CaCO₃) concentrations. Other biogas scrubber systems do not produce a liquid waste, but instead produce a solid sulfur compound. This Order prohibits the discharge of a hazardous waste, or biogas scrubber effluent in a manner that violates Title 22 CCR Section 66268.3, and requires the Discharger to evaluate the

biogas scrubber effluent and provide a description of its handling, and disposition/disposal.

Centralized anaerobic digesters may digest manure only, or may digest a mixture of manure and other organic feedstocks (co-digestion). In a co-digestion facility, an organic supplemental feedstock material is generally imported to the facility and combined with manure to optimize gas production. This supplemental feedstock may include a combination of materials such as non-saleable ice cream or salad dressing, used frying oil from fast food restaurants, grape seed oil, cotton seed oil protein powders and sugary flavorings, stillage from corn-based ethanol manufacturing, and/or fatty water skimmings. The use of biosolids, human waste (e.g., sludge, septage, domestic and municipal wastewater), or mammalian tissue (except as contained in compostable material from the food service industry, grocery stores, or residential food scrap collection) as a co-digester feedstock, or application of these materials to a land application area is prohibited by this Order.

Centralized dairy manure digester/co-digester facilities generally consist of a production area(s) and land application area(s). The production area(s) may include the digester, feed and feedstock storage areas, waste management components such as solids separators, wastewater retention ponds, digestate (digester solid residuals) storage areas, stormwater retention ponds, and pumps and piping to distribute waste to the land application areas for nutrient reuse.

For the purposes of this Order, “waste” includes, but is not limited to, manure; leachate; digestate (digester solids); digester liquids; gas scrubber waste (produced during the cleaning of the biogas); digester/co-digester feedstocks; dairy and dairy manure digester or co-digester process wastewater; and any water, precipitation or rainfall runoff, that contacts raw materials, digester feedstocks, products, or byproducts such as manure, compost piles, feed, silage, animal bedding, or digester solids.

Wastewater produced by the digester/co-digester operations is typically stored and blended with irrigation water in wastewater retention ponds prior to application to the land application area(s). This Order prohibits the discharge of wastewater to surface water.

REASON FOR THE CENTRAL VALLEY WATER BOARD ISSUING THIS GENERAL ORDER

This Order addresses the recommendations of the *Bioenergy Action Plan for California*, and Governor Schwarzenegger’s Executive Orders S-06-06 and S-14-08. Under the section heading “Complex and Time-Consuming Permitting Process” the Recommendations for a Bioenergy Plan for California states “The costs of dealing with California’s time-consuming and complex siting and permitting process can hamper bioenergy project development, especially when one considers the fact that even large biomass energy projects are relatively small compared to their conventional energy

counterparts, making costs associated with permitting a larger fraction of overall project costs. Developers have repeatedly indicated that the challenges faced in navigating the permitting process may be the number one barrier to establishing new facilities. This is exacerbated by the fact that permitting costs are incurred early in the project development process, when capital is most at risk and costly.” The report recommends that California “consider ways to simplify siting and permitting” of bioenergy projects.

This Order encourages bioenergy projects involving centralized dairy digesters by streamlining the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) permitting process through the use of general waste discharge requirements for dairy digester or dairy co-digester projects. This Order is consistent with State Water Resources Control Board (State Water Board) Resolution No. 2007-0059, which, “...*supports implementation of Bioenergy Action Plan for California dated July 2006 and renews its commitment in this plan to:*

- *Identify clear and consistent procedures that are used to protect water quality from the harvesting of biomass and the operation of biomass facilities.*
- *Conduct prompt reviews of planning documents, environmental documents prepared under the California Environmental Quality Act (CEQA) and monitoring proposal for biomass harvesting and biomass facilities.*
- *Work in cooperation with the Department of Forestry and Department of Food and Agriculture to ensure that adequate criteria for water protection and water quality are put into place on agricultural and forest lands in California.”*

CENTRAL VALLEY WATER BOARD AUTHORITY TO ISSUE WASTE DISCHARGE REQUIREMENTS ORDERS

The Central Valley Water Board authority to regulate waste discharges that could affect the quality of the waters of the state, which includes both surface water and groundwater, and the prevention of nuisance, is found in the Porter-Cologne Water Quality Control Act (California Water Code Division 7).

In regulating discharges of waste, the Central Valley Water Board implements State laws and regulations. The Central Valley Water Board is authorized to prescribe waste discharge requirements for proposed, existing, or material changes in discharges of waste and must implement the relevant water quality control plans. The Central Valley Water Board may prescribe general waste discharge requirements to a category of discharges if all the following criteria apply to the discharges in that category.

- a. The discharges are produced by the same or similar operations.
- b. The discharges involve the same or similar types of waste.

- c. The discharges require the same or similar treatment standards.
- d. The discharges are more appropriately regulated under general requirements than individual requirements.

A general order for centralized dairy digester or co-digester facilities is appropriate because they: (a) involve the same or substantially similar types of operations, (b) discharge the same or substantially the same types of wastes, (c) are subject to State regulations that impose the same or similar treatment standards, (d) have the same potential to impact surface water or groundwater quality, and (e) given the potentially large number of facilities and their similarities, centralized dairy digester or dairy co-digester facilities are more appropriately regulated under general WDRs than individual WDRs.

APPLICABLE REGULATIONS, PLANS, AND POLICIES

Title 27 California Code of Regulations

Pursuant to Section 20090(f) of Title 27, California Code of Regulations (CCR), the use of nonhazardous decomposable waste as a soil amendment pursuant to best management practices is exempt from Title 27, provided the regional board may issue waste discharge or reclamation requirements for such use. Additionally, pursuant to Section 20090(h), recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals are exempt, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of Title 27.

None of the wastes regulated by this Order are hazardous or are required to be treated as hazardous wastes. All of the wastes regulated by this Order are decomposable and are required to be applied to land in accordance with a certified NMP and a SMP (best management practices), and are thus exempt from Title 27 pursuant to Section 20090(f).

The use of dairy manure and/or supplemental feedstock to generate electricity at centralized digester facilities represents a use of materials salvaged from dairy waste. In addition, the use of materials in digested manure to grow crops in accordance with a Nutrient Management Plan represents a further use and/or recycling of materials salvaged from dairy waste. Accordingly, the activities related to the use of digested dairy waste, if conducted in accordance with the requirements of this Order, are exempt from Title 27 pursuant to section 20090(h).

Title 27 California Code of Regulations (CCR) Division 2, Subdivision 1, Chapter 7, Subchapter 2, Article 1 of Title 27 prescribes minimum standards for discharge of animal wastes at confined animal facilities to protect both surface water and groundwater quality. The Central Valley Water Board is authorized to impose

requirements more stringent than the minimum standards as necessary to protect water quality.

This Order contains provisions that require the discharge of centralized dairy digester or dairy co-digester wastes to land application areas covered by this Order be in accordance with Title 27 regulations pertaining to the confined animal facilities, including more stringent provisions as necessary to protect surface water and groundwater quality. Centralized manure digester and co-digester wastes, which are largely digested manure with other organic feedstocks, are addressed in this Order in a manner similar to, but more stringent than, that in which dairy manure and wastewater are addressed under General Order for Existing Milk Cow Dairies, R5-2007-0035 (Dairy General Order). Imported feedstocks will be characterized with respect to mineral and metal content, and to ensure that they are non-hazardous, prior to acceptance as co-digester feedstocks. Digester produced process wastewater and digestate will be periodically analyzed for mineral content, salt content, and nutrient content (nitrogen, phosphorus, and potassium). Additionally analyses for metals contents in co-digester wastewater and digestate are required. Biogas scrubber effluent shall not be discharged in a manner that violated Title 22 CCR Section 66268.3.

The authorized discharge of digester or co-digester process wastewater and digester solids (digestate), will not cause exceedances of Basin Plan requirements or applicable water quality objectives, and are thus exempt from Title 27 pursuant to Section 20090(a).

California Environmental Quality Act

The Central Valley Water Board is the lead agency for purposes of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) with respect to adoption of this Order. An Initial Study (IS) and Notice of Preparation (NOP) for dairy digester projects were prepared by Environmental Services Associates (ESA) for the Central Valley Water Board and were circulated by the Central Valley Water Board on 18 March 2010. Three scoping meetings were held at the Central Valley Water Board offices, two in Ranch Cordova and one in Fresno to receive comments on the IS and NOP.

From its inception, the program EIR was designed to be useful to other permitting agencies such as counties and local Air Pollution Control Districts, and to work in coordination with Cal Recycle, who is preparing a similar EIR for digesters associated with municipal solid waste disposal facilities. Throughout the spring and early summer of 2010, staff consulted with other state agencies, air districts, environmental groups, environmental justice groups, digester developers, and interested parties through a series of meetings of a Technical Advisory Group formed for this purpose. Input from the State Water Board, Cal Recycle, California Air Resources Control Board, California Department of Fish and Game, and local Air Pollution Control Districts, as well as other interested parties was sought and incorporated into the draft program EIR.

On 8 July 2010, the Central Valley Water Board circulated a draft Program Environmental Impact Report (PEIR) for Dairy Manure Digester and Co-digester Facilities for public comment. Public comments were received until 23 August 2010 and responses to comments were prepared. During the public comment period, staff conducted two workshops at which it obtained oral comments and informal feedback on the draft PEIR.

On 10 December 2010, in accordance with the California Environmental Quality Act, the Central Valley Water Board, acting as the lead agency, adopted Resolution No. R5-2010-0116, which certified the Dairy Manure Digester and Co-digesters Facility program EIR.

The Central Valley Water Board is the lead agency for purposes of CEQA (Public Resources Code Section 21000 et seq.) with respect to adoption of this Order.

In adopting the EIR, the Central Valley Water Board found that construction and operation of a dairy digester and co-digester facilities could have significant environmental impacts, but that those impacts could be mitigated to a less than significant level when permitted facilities implement mitigation measures. The mitigation measures identified by the EIR are implemented through this Order. Two potentially significant cumulative environmental impacts identified in the EIR cannot be feasibly mitigated to a less than significant level. For those two impacts the interest of the people of the State in reducing greenhouse gas emissions and promoting the beneficial reuse of waste materials outweighs any cumulative environmental impact to water quality incident to discharges from this class of facility.

Water Quality Control Plans

The Central Valley Water Board has adopted Water Quality Control Plans (Basin Plans) for the Sacramento River and San Joaquin River Basins (4th edition) and for the Tulare Lake Basin (2nd edition). These two Basin Plans designate the beneficial uses of groundwater and surface waters in the Region, specify water quality objectives to protect those uses, and include implementation programs for achieving water quality objectives. The Basin Plans also include plans and policies of the State Water Resources Control Board (State Water Board) incorporated by reference, including State Water Board Resolution 68-16 (*Statement of Policy with Respect to Maintaining High Quality Waters in California*), State Water Board Resolution 88-63 (*Sources of Drinking Water Policy*), and State Water Board Resolution 92-49 (*Policies and Procedures for Investigation and Cleanup or Abatement of Discharges Under Water Code Section 13304*). This Order specifies requirements necessary to comply with the Basin Plans, including protecting the beneficial uses specified in the Basin Plans, and other applicable plans and policies.

Beneficial Uses of Surface Water and Groundwater

Pursuant to Chapter II of the Basin Plans, the beneficial uses of surface water may include: municipal and domestic supply; agricultural supply; agricultural stock watering; industrial process supply; industrial service supply; hydro-power generation; body contact water recreation; canoeing and rafting; other non-body contact water recreation; warm freshwater aquatic habitat; cold freshwater aquatic habitat; warm fish migration habitat; cold fish migration habitat; warm spawning habitat; cold spawning habitat; wildlife habitat; navigation; rare, threatened, and endangered species; groundwater recharge; freshwater replenishment; aquaculture; and preservation of biological habitats of special significance. Both Basin Plans contain a Table that lists the surface water bodies and the beneficial uses and where not listed, the Basin Plans designate beneficial uses based on the waters to which they are tributary or applicable state or federal requirements. These beneficial uses are protected in this Order by, among other requirements, the prohibition of a direct or indirect discharge of waste and/or storm water from the production area to surface waters, the prohibition of discharge of wastewater to surface waters from cropland, the prohibition of any discharge of storm water to surface water from the land application areas.

Chapter II of the Sacramento River and San Joaquin River Basin Plan states: *“Unless otherwise designated by the Regional Water Board, all groundwater in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.”* Chapter II of the Tulare Lake Basin Plan designates the beneficial uses of groundwater to include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, water contact recreation, and wildlife habitat. The Tulare Lake Basin Plan includes a Table that lists the designated beneficial uses of groundwater within the Basin. These beneficial uses are protected in this Order by, among other requirements, the specification that the discharge of waste at dairy shall not cause a violation of water quality objectives or exceed a natural background concentration, whichever is greater, or cause pollution or nuisance.

The Basin Plan establishes both numeric and narrative water quality objectives to protect the beneficial uses of waters of the State. Narrative water quality objectives exist for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. The primary constituents of concern due to discharges of waste from dairies with digesters are ammonia, nitrates, phosphorus, chloride, boron, salts, and pathogens. The discharge of waste from dairies with digesters to surface waters of the State are prohibited, and discharge of dairy/digester wastes must not cause groundwater to exceed the applicable water quality objectives, or natural background quality for those constituents.

The Tulare Lake Basin Plan identifies the greatest long-term problem facing the entire basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Tulare Lake Basin Plan recognizes that degradation by salinity is unavoidable without a plan for removing salts from the Basin and that salt sources should be managed to the extent practicable to reduce the rate of ground water degradation until there is a long-term solution to the salt imbalance. This Order prohibits the application of non-nutrient salts to land application areas to 2,000 pounds per year for single cropped fields, and 3,000 pounds per year for double cropped fields. It also requires the Discharger to prepare and implement a Salt Minimization Plan.

State Water Resources Control Board Resolution 68-16

State Water Resources Control Board Resolution 68-16 requires that any activity which discharges a waste to existing high quality waters must meet waste discharge requirements which will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State will be maintained. To be consistent with State Water Resources Control Board Resolution 68-16, Dischargers must employ BPTC measures.

Best Practicable Treatment Or Control Measures For Retention Ponds

Pursuant to Title 40 Code of Federal Regulations Section 122.23(e), precipitation related discharges from land application areas are considered agricultural stormwater discharges and are not subject to the United States Environmental Protection Agency (USEPA) regulations for concentrated animal feeding operations (CAFOs) if the "...manure, litter, or process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, as specified in Section 122.42(e)(1)(vi)-(ix)..."

Centralized dairy digester facilities will usually include ponds used to contain dairy waste or dairy and digester wastes combined. Centralized dairy digester facilities may return digester waste to participating dairy for storage in the dairy pond prior to application the land application areas. Title 27 CCR Division 2 requires that confined animal facility retention ponds be located in, or lined with, soils of at least 10% clay and no more than 10% gravel; however, studies conducted prior to issuance of the Dairy General Order indicated that this minimum standard was not always protective of groundwater quality. The Dairy General Order requires new or expanded ponds, or existing ponds found to be causing impacts to groundwater quality, to be constructed or reconstructed to meet the BPTC performance standard and are prohibited from causing or contributing to a condition of pollution.

Digester wastes stored in ponds prior to use as a nutrient source on land application areas are expected to have similar characteristics as dairy wastes, given that the primary feedstock for the digester will be dairy manure. Supplemental feedstocks used in centralized co-digesters will also consist mainly of organic materials, and the characteristics of co-digester feedstocks will be monitored prior to their use in the digester to ensure that they are not hazardous, or contain high levels salts. Consistent with State Water Resources Control Board Resolution 68-16, this Order requires that new retention ponds or reconstructed existing ponds be designed and constructed to comply with the groundwater limitations in the Order. The Order provides a two-tiered approach that will allow the Discharger two options to retention pond design. This approach will significantly reduce the time required for approval by the Executive Officer. Tier 1 includes a retention pond designed to consist of a double liner constructed with 60-mil high density polyethylene or material of equivalent durability with a leachate collection and removal system (constructed in accordance with Section 20340 of Title 27) between the two liners. This design will be considered to be consistent with Resolution 68-16. Review for retention ponds designed to this standard will be conducted in less than 30 days of receipt of a complete design plan package submitted to the Board.

Tier 2 allows other retention pond designs; however, the Discharger must demonstrate through submittal of technical reports that the alternative design is protective of groundwater quality.

Best Practicable Treatment or Control Measures for Land Application Areas

The USEPA has established best practicable control technology currently available for application of waste from large concentrated animal feeding operations to land application areas. The best practicable control technology includes best management practices required by Title 40 Code of Federal Regulations Section 122.42(e)(1)(vi)-(ix).

The technical standards for nutrient management as specified in Attachment D of this Order are consistent with the USEPA best practicable control technology and the best management practices required by Title 40 Code of Federal Regulations Section 122.42(e)(1)(vi)-(ix) and the large CAFO best practicable control technology. Since they are consistent with USEPA best practicable control technology, the technical standards for nutrient management represent best practicable treatment or control for the purposes of State Water Resources Control Board Resolution 68-16.

Farming practices on lands that receive centralized dairy digester or co-digester facilities waste contribute salts, nutrients, pesticides, trace elements, sediments and other by-products that can affect the quality of surface water and groundwater. Evaporation and crop transpiration remove water from soils, which can result in an accumulation of salts in the root zone of the soils at levels that retard or inhibit plant growth. Additional amounts of water often are applied to leach the salts below the root zones. The leached salts can reach groundwater or surface water. Even using the

most efficient irrigation systems and appropriate fertilizer application rates and timing to correspond to crop needs, irrigation of cropland will have some measurable impact on existing high quality groundwater as a result of the leaching required to protect the crops from salt buildup in the root zone.

In land applications areas where groundwater is shallow, some Dischargers may have subsurface (tile) drainage systems to maintain the groundwater level below the crop's root zone. Drainage from these systems may be discharged directly to surface water bodies or to drainage ditches that discharge to surface water bodies. Some of these systems discharge to evaporation basins that are subject to waste discharge requirements. Discharges from these systems have elevated concentrations of salts, including nitrates and other nutrients. This Order requires Dischargers to monitor tile drainage discharges from these systems.

This Order requires each Discharger to develop and implement a Nutrient Management Plan, which should result in improved water quality by reducing the amount of dairy waste applied to the land application areas.

Consistent with State Water Resources Control Board Resolution 68-16, this Order requires that process wastewater only be applied to land application areas under the Discharger's control and that applications be managed according to a certified Nutrient Management Plan that is consistent with the technical standards specified in Attachment D, and not cause groundwater to exceed the groundwater limitations of this Order.

The Central Valley Water Board is concerned with the potential long-term effects of salt and nutrient loading on surface and groundwater resources throughout the Central Valley. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. The proposed WDRs require the Discharger to prepare and implement a Salinity Minimization Plan to identify and reduce sources of salinity in the dairy and digester feedstocks and discharges, and measures available to minimize the concentration and mass loading of salts. The WDRs may be reopened in the future to incorporate applicable recommendations from the CV-SALTS management program.

SURFACE AND GROUNDWATER LIMITATIONS

The appropriate water quality limitations for a particular centralized digester facility covered under this Order depend on the beneficial uses of the water as designated in the Basin Plan(s) and the water quality objectives necessary to protect all beneficial uses of the water. This Order prohibits: the direct or indirect discharge of waste and/or storm water from the digester facilities to surface waters; the discharge of waste to surface waters which causes or contributes to an exceedance of any applicable water quality objective in the Basin Plans or any applicable state or federal water quality

criteria; or a violation of any applicable state or federal policies or regulations. The groundwater limitations of this Order require that discharge of waste from centralized digesters shall not cause the underlying groundwater to exceed water quality objectives or natural background quality whichever is higher; unreasonably affect beneficial uses; or cause a condition of pollution or nuisance.” These limitations are consistent with the Basin Plan(s) and State Water Board Resolution 68-16.

This Order prohibits the discharge to surface water of any centralized dairy digester or co-digester facilities waste from the digester facility, or the land application area(s). When such discharges occur, this Order requires the Discharger to sample the discharge.

LAND APPLICATION SPECIFICATIONS

This Order includes land application specifications that require Dischargers to develop and implement a NMP that provides protection of groundwater quality and prevents the discharge of wastes to surface waters. The contents of the NMP and technical standards for nutrient management are specified in Attachment D to this Order.

The technical standards for nutrient management require Dischargers to monitor soil, manure, digester solids, process wastewater, irrigation water, and plant tissue as specified in Monitoring and Reporting Program No. R5-2011-XXXX. The results of this monitoring are to be used in the development and implementation of the NMP.

This Order also requires Dischargers to create and maintain specific records to document implementation and management of the elements of the NMP, records for the land application area, and a copy of the Discharger’s NMP.

MONITORING AND REPORTING PROGRAM REQUIREMENTS

This Order includes requires compliance with Monitoring and Reporting Program No. R5-2011-XXXX and future revisions thereto, or with an individual monitoring and reporting program, as specified by the Central Valley Water Board or the Executive Officer. The Monitoring and Reporting Program requires:

- periodic inspections of the production area and land application areas
- monitoring of co-digestion feedstocks, manure, process wastewater, crops, and soil
- recording of operation and maintenance activities
- groundwater monitoring
- storm water monitoring
- monitoring of surface water and discharges to surface water
- annual reporting
- annual reporting of groundwater monitoring
- annual storm water reporting

- noncompliance reporting
- discharge reporting

HOW TO OBTAIN COVERAGE AND TERMINATE COVERAGE

To obtain coverage under this Order, the Discharger must submit a complete NOI form, a complete Facility Information Report, and filing fee for each proposed centralized manure digester or manure co-digester facility covered by this Order. The NOI form may be modified by the Executive Officer as the need arises. An NOI form (Attachment A) and the components required in the Facility Information Report (Attachment B) are attached to this Order. Coverage does not begin until a Notice of Applicability has been issued by the Executive Officer.

Coverage under this Order may be terminated upon Executive Officer approval of by submission of a Notice of Termination (NOT), which is attached to this Order as Attachment C, and a closure work plan that outlines the steps to be taken to clean up the facility, and a closure report documenting that all closure activities were completed as proposed and approved in the closure plan. The extent of closure activities may vary depending on the post-closure use of the facility (e.g., if the facility reverts to a dairy-only operation, closure activities may be limited to digester facilities). The Discharger(s) will be responsible for paying all annual fees for coverage under this Order until approval of the NOT is granted by the Executive Officer. The NOT form may be modified by the Executive Officer as the need arises.

If an individual WDR Order is issued to the Discharger(s) for a project covered by this Order, the applicability of this Order to the Discharger(s) is automatically terminated on the effective date of the individual WDR Order.