STAFF REPORT

CONSIDERATION OF A RESOLUTION TO ADOPT FINAL WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

BACKGROUND

The California Department of Energy's *Bioenergy Action Plan for California* found that the cost of dealing with California's time consuming and complex siting and permitting process can hamper bioenergy project development. State Water Resources Control Board Resolution No.2007-0059 supports implementation of the *Bioenergy Action Plan for California* 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 proposals for biomass harvesting and biomass facilities, work…to ensure that adequate criteria for water protection and water quality are put into place on agricultural and forest lands in California."*

The proposed General Order and the accompanying Monitoring and Reporting Program streamline the Central Valley Water Board's permitting process for centralized dairy manure digester and co-digester facilities, and provide for the protection of the beneficial uses of surface and groundwater.

The proposed General Order will apply to centralized dairy anaerobic digester or co-digester facilities that use only dairy manure as well as to co-digesters that import either manure or organic feedstock to supplement manure feedstocks, and to associated land application areas.

Dairy operations that are in compliance with Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2007-0035 (Dairy General Order) which supply dairy manure (liquid, solid, or both) to a centralized dairy manure-only digester and receive back from a centralized dairy manure-only digester the same mass or a lesser mass of waste and of the same character as the waste supplied, may continue to be regulated under the Dairy General Order.

The proposed General Order requires that all digester process wastewater and digestate must be applied to land application areas (cropland) for nutrient recycling and in accordance with a certified nutrient management plan. All land application areas to which centralized dairy digester or co-digester wastes are applied must be regulated under the proposed General Order. When centralized

digester waste is applied to Dairy General Order dairy cropland, those discharges and the fields accepting the discharge will be subject to the proposed General Order. The certified nutrient management plan required by this order must account for both dairy and centralized digester nutrients. The Central Valley Water Board can request a Report of Waste Discharge of these Dairy General Order dairies if circumstances indicate the necessity for individual waste discharge requirements.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

In accordance with the California Environmental Quality Act (CEQA), the Central Valley Water Board, acting as the lead agency, adopted Resolution No. R5-2010-0116 on 10 December 2010, which certified a Dairy Manure Digester and Co-digester Facilities, Program EIR.

The proposed General Order incorporates all mitigation measures for the significant environmental impacts identified in the Dairy Manure Digester and Co-digester Facilities program EIR, except for measures within the jurisdiction of other public agencies. Mitigation measures addressing significant impacts under the jurisdiction of other public agencies can and should be adopted by those agencies as identified in Appendix A of the Program EIR. With respect to impacts 5.6 (cumulative impact on groundwater quality) and 6.6 (cumulative impact on air quality) identified in the EIR, the Central Valley Water Board, must make a finding of overriding considerations in accordance with Title14 CCR Section15093. That finding is incorporated by reference into the proposed General Order.

The Program EIR identified significant environmental impacts, and proposed mitigation measures. A listing of the significant environmental impacts, the written findings regarding those impacts required by Section 15091 of the CEQA Guidelines, and the explanation for each finding are contained in a Finding of Fact and Statement of Overriding Considerations to be adopted with the proposed General Order.

Pursuant to sections 15091(d) and 15097 of the CEQA Guidelines, a Mitigation Monitoring and Reporting Program has been incorporated into the proposed General Order as enforceable permit provisions for potential impacts to water quality. For mitigation measures not traditionally within the expertise of the Central Valley Water Board, mitigation measures have been incorporated in the permit enrollment process.

DIFFERENCES BETWEEN THE DAIRY MANURE ANAEROBIC DIGESTER OR CO-DIGESTER GENERAL ORDER

The Proposed Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities General Order (Centralized Digester General Order) contains many requirements similar to those contained in Dairy Manure Anaerobic Digester or Co-digester Facilities General Order R5-2010-0130 (Digester General Order). However, the proposed General Order does not address the dairy operations portions covered under the Digester General Order.

All mitigation measures required by the Program EIR have been incorporated into the proposed Centralized Digester General Order either as enforceable provisions of the Order for those mitigation measures dealing with water quality, or into the application process, for those mitigation measures for which other agencies have responsibility.

The Monitoring and Reporting Program (MRP) for the proposed Centralized Digester General Order was also written to follow the format of the Digester General Order MRP and contains many similar requirements.

CONTENTS OF THE CENTRALIZED DIGESTER GENERAL ORDER

The proposed General Order requires submittal of a complete Notice of Intent (NOI) and a Facility Information Report prior to issuance of a Notice of Applicability by the Executive Officer. The NOI requires facility and ownership information and contains a checklist of information needed to process the application. The FIR must include a description of the digester facility and identification of land application areas, a Waste Management Plan and a Salt Minimization Plan.

The proposed General Order requires implementation of the Waste Management Plan, Salt Minimization Plan, and the preparation and implementation of a Nutrient Management Plan for land disposal of digester wastes. The proposed General Order also requires compliance with State Water Resources Control Board Resolution 68-16 (Antidegradation Policy), and monitoring and reporting to ensure the protection of beneficial uses of waters of the State and compliance with the proposed General Order.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION (CENTRAL VALLEY WATER BOARD)

RESOLUTION NO. R5-2011-0039

ADOPTION OF FINAL WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR
CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES (GENERAL ORDER)
AS IN
THE FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT (PROGRAM EIR) AND FINDINGS

WHEREAS:

1. The Central Valley Water Board has certified the Final Program EIR for a waste discharge regulatory program for dairy manure digester and co-digester facilities at its December 2010 meeting.

2. The Central Valley Water Board has prepared and circulated the draft General Order for public review and comment.

3. The Central Valley Water Board has considered and responded to the comments received on the draft General Order.

4. This General Order and the implementation procedures supporting the General Order incorporate all mitigation measures for the significant environmental impacts identified in the Final Program EIR, except for measures within the jurisdiction of other public agencies. A listing of those significant environmental impacts, the written findings regarding those impacts required by §15091 of the Guidelines, and the explanation for each finding are contained in a separate Findings of Fact and Statement of Overriding Considerations document (Attachment A), which is incorporated by reference in this resolution and made a part of this record.

5. Pursuant to §§ 15091(d) and 15097 of the CEQA Guidelines, a Mitigation Monitoring and Reporting Program has been incorporated into the General Order as described in Attachment A.

6. The Final Program EIR identified significant unavoidable impacts for water quality and criteria air pollutants. Pursuant to §15093 of the CEQA Guidelines, the Central Valley Water Board has prepared a Statement of Overriding Considerations, which balances the specific economic, legal, social, technological, or other benefits of the General Order against the unavoidable environmental risks of the General Order. The Statement of Overriding Considerations is contained in Attachment A, which is incorporated by reference in this resolution and made a part of this record.

7. The Central Valley Water Board has reviewed and considered the requirements within the General Order, and the General Order reflects the independent judgment of the Central Valley Water Board.

THEREFORE BE IT RESOLVED THAT:

The Central Valley Water Board adopts Order No. R5-2011-0039, General Order for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities.

CERTIFICATION

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region on 10 June 2011.

_____
PAMELA C. CREEDON, Executive Officer

Attachment A

Findings of Fact and
Statement of Overriding Considerations

Resolution No.R5-2011-0039
Adoption of Final Waste Discharge Requirements General Order
for
Centralized Dairy Manure Anaerobic Digester or Centralized Dairy
Manure Co-digester Facilities
as in
The Final Program Environmental Impact Report and Findings

As required by the California Environmental Quality Act (CEQA), the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) has made specific findings regarding the environmental effects of the project. Those findings are presented below, along with facts and evidence to support each finding.

The Central Valley Water Board certified a Final Program Environmental Impact Report (Program EIR) for a waste discharge regulatory program for dairy manure digester and co-digester facilities including centralized facilities (the "proposed project") at its December 2010 meeting. The Final Program EIR is composed of two documents. These documents are identified below:

1. Draft Program EIR, Dairy Manure Digester and Co-digester Facilities, July 2010 (State Clearinghouse Number 2010031085); and
2. Final Program EIR, Dairy Manure Digester and Co-digester Facilities, December 2010.

The documents and other materials that constitute the record of proceedings on which these findings are based are located at the Central Valley Water Board office at 1685 "E" Street, Suite 100, Fresno, CA 93706-2007. This information is provided in compliance with Public Resources Code Section 21081.6(a) (2).

Potentially Significant Impacts

Under the CEQA Guidelines, public agencies are required to make written findings for each significant effect associated with a project prior to approval of the project. The possible findings are:

- Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR. (CEQA Guidelines, Section 15091[a][1])

- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. (CEQA Guidelines, Section 15091[a][2])

- Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR. (CEQA Guidelines, Section 15091[a][3])

Each of these findings must be supported by substantial evidence in the record.

The Central Valley Water Board finds that the proposed waste discharge regulatory program will have potentially significant impacts, identified in the Final Program EIR, and listed in Table 1 (attached). In Table 1, the Central Valley Water Board also makes appropriate findings for each potentially significant impact, as required by CEQA Guidelines Section 15091.

Significant and Unavoidable Impacts

The Central Valley Water Board finds that the project will have significant and unavoidable impacts, identified in the Final Program EIR and listed in Table 1 (attached), that cannot be eliminated or reduced to a less than significant level. These impacts are:

> **Impact 5.6:** Development of dairy digester and co-digester facilities could contribute to cumulative impacts to water quality.
>
> **Impact 6.6:** Development of dairy digester and co-digester facilities in Region 5, together with anticipated cumulative development in the area, would contribute to regional criteria pollutants.

The Central Valley Water Board has prepared a statement of overriding consideration for these impacts, below.

Mitigation Monitoring and Reporting Program

Mitigation monitoring is the follow-up effort by a public agency to ensure that mitigation measures are implemented. In the Program EIR, the Central Valley Water Board has identified mitigation measures that reduce potentially significant effects of the program to a less than significant level. Section 15097 of the CEQA Guidelines requires the lead agency to prepare a Mitigation Monitoring and Reporting Program (MMRP) for those mitigation measures prior to project approval. The General Order for Centralized Dairy Manure Anaerobic Digester

or Centralized Dairy Manure Co-digester Facilities, R5-2011-0039 (General Order) contains an MMRP for all mitigation measures described in the Final EIR, except where the Central Valley Water Board finds, pursuant to Section 15091(a)(2), that implementation of the mitigation measure is within the responsibility of other public agencies that can and should implement the measure. Central Valley Water Board's Section 15091(a)(2) findings are included in Table 1.

The MMRP for the General Order is structured in three main parts. For potential impacts to water quality, the General Order includes the mitigation measures as enforceable permit provisions contained in the body of the General Order. For other mitigation measures not traditionally within the expertise of the Central Valley Water Board, such as those protecting biological resources and cultural resources, the mitigation measures have been incorporated into the Notice of Intent (NOI) permit enrollment process for the General Order such that permit applicants will need to document that they have submitted the paperwork and performed other studies set forth in the mitigation measures. For the measures by which the Central Valley Water Board makes a Section 15091(a)(2) finding, the Central Valley Water Board takes a supporting role in the General Order by requiring permit applicants to provide documentation with the NOI that they submitted the appropriate paperwork and other studies to the agencies described in the Final EIR. The mitigation monitoring and reporting plan which provides the framework for the General Order's MMRP is provided in Appendix A of the Final Program EIR.

Alternatives to the Project

An EIR is required to describe a range of reasonable alternatives to the project that could feasibly attain the objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and to evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6(a)).

Additionally, CEQA Guidelines Section 15126.6(b) requires consideration of alternatives to the project or its location that could avoid or substantially lessen any significant environmental effects of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives. The range of alternatives required in an EIR is governed by a rule of reason that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6(f)).

The following alternatives are discussed in the Draft Program EIR:

1. No Project Alternative
2. Additional Co-digestion Substrate Restrictions Alternative
3. Thermal Conversion Alternative
4. Reduced NOx Emissions Alternative

Descriptions of these alternatives, the basis for selection, and the environmental characteristics of the alternatives are discussed in Chapter 17 of the draft Program EIR.

These alternatives are compared to the following project objectives, as outlined in the Draft Program EIR (Chapter 3):

- Protect the beneficial uses of surface and groundwater[1] within the Central Valley Region from discharges to land associated with dairy manure digesters and co-digesters on or off-site of dairies.

- Provide a regulatory framework for the water quality aspects of anaerobic biological digestion facilities using dairy manure and dairy manure with other organic substrates (co-digestion) to produce biogas (a flexible renewable fuel source).

- Assist the State in meeting greenhouse gas (GHG) reduction measures in support of the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) through the production of biogas from dairy manure.

- Provide a renewable green energy source to allow energy companies to help achieve the 2010 and 2020 California Renewables Portfolio Standard (RPS) through the production of biogas from dairy manure.

- Reduce the time required to develop and issue water quality permits for dairy manure digester and co-digester projects by more than 75 percent primarily through the issuance of one or more Waste Discharge Requirements (WDRs) General Orders (GOs) and secondarily through the issuance of Individual WDRs or Conditional Waivers of WDRs (CWs).

[1] Beneficial uses are described in *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004 (Tulare Lake Basin Plan) and *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basins*, Fourth Edition, revised September 2009 (Sacramento and San Joaquin Basin Plan).

- Reduce the permitting time for other State and local agencies[2] with discretionary permit responsibilities by providing a Program EIR that can be relied upon or tiered from for region wide environmental and regulatory settings, project alternatives analyses and cumulative impacts analyses.

Evaluation and Findings:

The CEQA Guidelines, at Section 15091(a)(3) require findings about the feasibility of project alternatives whenever the project within the responsibility and jurisdiction of the lead agency will have a significant environmental effect that has not been mitigated to a less than significant level. The significant impacts that require such findings are:

- Impact 5.6: Development of dairy digester and co-digester facilities could contribute to cumulative impacts to water quality.

- Impact 6.6: Development of dairy digester and co-digester facilities in Region 5, together with anticipated cumulative development in the area, would contribute to regional criteria pollutants.

No Project Alternative

The No Project Alternative would maintain the status quo for centralized dairy manure digester and centralized dairy manure co-digester facilities with respect to CEQA and permitting. The Central Valley Water Board's waste discharge regulatory program for dairy manure digesters would not be implemented under this alternative. Centralized dairy digester and centralized co-digester facilities would be required to comply with current CEQA and Central Valley Water Board regulatory requirements without the benefit of the regulatory program. Development of centralized dairy digesters and centralized co-digester facilities would continue in its current form and would be regulated by the Central Valley Water Board through individual WDRs and exemptions, by other permits from responsible agencies (i.e., County Use Permits, air quality permits, etc.) and by county governments through local ordinances and regulations. The No Project Alternative would not change the time that is currently needed for permitting centralized dairy manure digester and centralized co-digester facilities, or reduce the time or expense required to develop and issue permits associated with centralized digesters by federal, State and local permitting agencies. This alternative would also be expected to result in the development of fewer facilities and therefore less renewable energy. The

[2] San Joaquin Valley Air Pollution Control District staff have estimated that the certification of the Program EIR will reduce air quality permitting time 50 percent or more for certain digester projects.

No Project Alternative fails to meet the objectives of the Program EIR. The No Project Alternative would not provide a regulatory framework for centralized dairy manure digesters, it would not assist in reducing GHG emissions, it would not help energy companies achieve RPS targets and it would not help to reduce the time required for permitting centralized dairy manure digesters. For the reasons stated in this paragraph, the lead agency does not choose to adopt this alternative.

Additional Co-digestion Substrate Restrictions Alternative

The restrictions in the Additional Co-digestion Substrate Restrictions Alternative are proposed to facilitate the management of nutrients and salts in the project area without unnecessarily restricting the potential for increase biogas production and tipping fee revenue. This alterative would apply three additional restrictions to the use of co-digestion substrates in centralized dairy manure digesters. First, it would prohibit the use of co-digestion substrates that originate from outside the regional aquifer. Second, it would prohibit the use of co-digestion substrates until centralized dairy digesters have identified and secured an appropriate destination or market for the additional digestate that would be generated by the additional co-digestion substrates. Finally, the alternative would restrict the percentage of non-manure co-substrates that would be processed by centralized dairy manure digester facilities.

The project is a regulatory program that seeks to reduce permitting time and promote the increase of renewable energy sources in California. Limiting the use of co-substrates could work against the project objective of reduced permitting time by adding additional regulations and restrictions. The alternative could also reduce the overall generation of biogas by reducing the income available from co-substrate tipping fees, and thus reducing some of the overall incentives of the project. Strict limitations on co-substrates would also affect the project goal of increasing renewable energy sources because co-substrates can significantly increase biogas generation. This alternative could further reduce the cumulative water impacts but would not reduce the cumulative air quality impact unless the alternative would result in lowering the number of facilities that are eventually developed. The lead agency finds that this alternative would likely restrict the development of centralized dairy digesters in Region 5 without compensating environmental benefits and therefore the lead agency does not adopt this alternative.

Thermal Conversion Alternative

The Thermal Conversion Alternative would replace anaerobic digesters with thermal conversion technologies. Under the Thermal Conversion Alternative the regulatory program would apply to the construction and operation of thermal

conversion facilities for the production of biogas from dairy manure. Thermal conversion technologies are different from direct incineration of organic matter in that they utilize environments with a range of sub-stoichiometric concentrations of oxygen and thus interrupt the combustion process before complete oxidation can occur. Much like anaerobic digestion, the resultant products can be used for a variety of products including combustion for energy, transportation fuels, industrial chemicals, and soil amendments. Unlike anaerobic digestion, however, thermal conversion involves temperatures sufficiently high to guarantee pathogen reduction.

The project is a regulatory program that seeks to promote availability of biofuels and renewable energy. Limiting the project to thermal conversion processes, which are not as commercially developed for use on dairy manure, could undermine opportunities for energy companies to achieve 2010 and 2020 California Renewable Portfolio Standards by converting dairy manure, green waste, and other waste steams to a valuable, renewable green energy resource. In addition, thermal conversion technologies only treat the screened/dried, solid portion of manure. This alternative would limit opportunities for on-site treatment of dairy manure process water. This could undermine the objective to create alternate waste treatment methods for dairy manure and other organic waste streams to the extent it would exclude the liquid component of the dairy manure. While the Thermal Conversion Alternative still meets the alternate waste treatment method objective, it does not meet it as efficiently as the project, and would not reduce the unavoidable impacts of the project.

Reduced NOx Emissions Alternative

The Reduced NOx Emissions Alternative would limit the use of combustion engines in the generation of electricity by requiring, or developing incentives, for biogas uses from dairy digester facilities that minimize NOx emissions in the Central Valley (i.e., fuel cells, transportation fuels and injection into utility gas pipelines). The Central Valley Water Board would issue discharge permits only to facilities demonstrating use of technologies supporting low-NOx emissions.

By limiting energy production to the use of fuel cells or for utility pipeline injection or for development of transportation fuel, significant unavoidable cumulative air quality impacts from the emission of NOx could be reduced. This alternative would not affect the unavoidable cumulative water quality impact. However, the project is a regulatory program that seeks to promote the increase of renewable energy sources in California. The majority of existing dairy manure digesters in California and in the United States generate electricity from the combustion of biogas. This alternative would reduce the options for producing renewable

energy (including the most common current option for dairy digesters). For these reasons, the lead agency does not find this alternative to be a feasible alternative to the proposed project.

Statement of Overriding Considerations

The Final Program EIR identifies two significant and unavoidable impacts, described above.

The Central Valley Water Board finds, pursuant to Public Resources Code Section 21081(b), that specific overriding economic, legal, social, technological, or other benefits outweigh the unavoidable adverse environmental effects of the proposed project (the General Order).

1. The General Order would encourage the development of centralized dairy manure digester and centralized co-digester facilities that could generate biogas, which is a renewable green energy source. Generation of electricity using biogas could help energy companies to help achieve the 2010 and 2020 California Renewables Portfolio Standard (RPS). Each facility developed under the program (up to 200 digesters over 10 years are considered) could generate on average approximately 250 kilowatts (kW) of electric power.

2. The General Order would also assist the State in meeting GHG reduction measures in support of the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) through the production of biogas (a flexible renewable fuel source). The cumulative air quality impact discussion in the Final Program EIR (Impact 6.5) indicates that build-out of the cumulative digester scenario (200 digesters over 10 years) under the program would result in a net reduction of 1.6 million metric tons per year of CO2 equivalent emissions.

3. The development of centralized dairy digesters may supplement the revenue sources available to dairies. The General Order would allow manure from multiple dairies along with co-digestion substrates to be digested at centralized facilities. As indicated in the Program EIR, co-digestion can increase the generation of biogas by two to five times or more when compared to manure-only digesters. The increased biogas has the potential to substantially increase revenues and make centralized dairy digesters more economically viable (since the revenue from biogas energy use is often the most important revenue source of a dairy digester).

4. Regulating centralized digesters facilities under the General Order reduces the time required for each facility to wait before its discharges are authorized by law. Further, the Program EIR accompanying the General Order will reduce the time required by other agencies with discretionary permit responsibilities to develop and issue permits because they may rely upon or tier from, as opposed to issuing a series of facility-specific permits, the Program EIR for regionwide environmental and regulatory settings, project alternatives analyses and cumulative impact analyses. Reducing the time required for permitting further encourages the development of centralized digesters and the benefits derived from such development as outlined in 1-3 above.

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
5. Hydrology and Water Quality		
Impact 5.2: Digester and co-digester development could adversely affect surface waters.	**Measure 5.2:** WDRs for digester and co-digester facilities shall include design and operational requirements to manage all wastes and discharges to protect surface waters. Requirements shall include the following: • Prohibitions against any surface water discharges (unless exempt from NPDES permitting requirements or covered by separate NPDES permit), • Prohibitions against any discharges that would cause exceedance of surface water quality objectives, • Setbacks from surface water bodies • Drainage requirements for co-digestion substrates/waste storage/receiving/handling areas to drain to on-site wastewater retention ponds, • Lining requirements for retention ponds in new facilities and operational dairies, • Monitoring requirements that include sampling data of soils, retention water, and waste streams to reconcile annually with Nutrient Management Plan (NMP), • Requirements for tailwater return systems or other effective methods to minimize offsite discharges; • Prohibitions against any unreasonable effects on beneficial uses of nearby surface waters.	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 5.2 has been incorporated into the General Order's prohibitions, specifications, and provisions.
Impact 5.3: Digester and co-digester development could adversely affect groundwater quality.	**Measure 5.3:** WDRs for the discharge to land from dairy digester and co-digester facilities shall include the following BPTC requirements or equivalent: • Prepare and implement site-specific Salt Minimization Plan (SMP) as approved by the Central Valley Water Board. The SMP shall consider the elimination, decommissioning, or the reduction in use of regenerative water softeners on process water distribution networks or, alternatively, evaluate and install alternate technology that reduces or eliminates on-site brine disposal; • Prepare and implement a site-specific NMP that incorporates analytical data for soils, wastewater, manure, digester solids, groundwater and/or surface water supply. The required analytical data is to be generated by a site-specific monitoring and reporting program. In the case of groundwater, data from an approved representative groundwater	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 5.3 has been incorporated into the General Order's prohibitions, specifications, and provisions.

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	monitoring program may be substituted for some or all site-specific groundwater monitoring, if appropriate. The NMP will be reconciled annually based on results of the monitoring and reporting program and site-specific measurements of agronomic rates; • Require all drainage be directed to a retention wastewater pond that has been designed to meet antidegradation provisions of Resolution 68-16 by an appropriately licensed professional; • To the extent practicable, use crops that maximize salt uptake; • Apply liquid digestate consistently with crop water uptake rates; • Prohibit hazardous substances in co-digestion substrates processed by each facility as verified by laboratory analytical testing; • Apply digestate at an approved rate commensurate with agronomic rate; • Properly time application of digestate in accordance with crop requirements; • Avoid excess irrigation; • Maintain cover crops and vegetative buffer zones; • Develop co-substrate acceptance criteria; • Perform vector control and reduction; • Monitor groundwater for pathogen indicator organisms; • Require that solid wastes be stored on surfaces designed in accordance with a site-specific Waste Management Plan prepared for the facility by an appropriate California registered professional in accordance with WDR requirements; • Maintain a neutral or alkaline pH for dairy digestate waste water applied to cropland unless conditions warrant otherwise as detailed in the NMP; • Prohibit hazardous waste, mammalian tissues (with the exception of mammalian tissue as contained in compostable material from the food service industry, grocery stores, or residential food scrap collection), dead animals, and human waste from all discharges; and • Incorporate lined digester and co-digestion substrate storage facilities that meet the antidegradation provisions of Resolution 68-16, as relevant, into project design in order to prevent groundwater contamination with salts, nutrients, and other constituents.	

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	Each facility shall prepare a site-specific Waste Management Plan in accordance with the WDR requirements for review and approval to the Central Valley Water Board prior to commencement of operations. Annual monitoring reports shall be reviewed by the Central Valley Water Board and any revisions deemed necessary to the handling, storage, or land application of wastes shall be incorporated into facility operations.	
Impact 5.4: Development of dairy digester and co-digester facilities could be exposed to flooding hazards.	**Measure 5.4:** WDRs for digester and co-digester facilities shall include design requirements for individual or centralized anaerobic digester or co-digester facilities and associated facilities to protect them from FEMA 100-year flood events. Design measures may include, but are not limited to: facility sitting, access placement, grading foundation soils above projected water elevation, and site protection.	Finding per Section 15091(a)(1): Miitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 5.4 has been incorporated into General Specification B.2 of the General Order.
Impact 5.6: Development of dairy digester and co-digester facilities could contribute to cumulative impacts to water quality.	**Measure 5.6:** Implement Mitigation Measures 5.2, 5.3 and 5.4.	Finding per Section 15091(a)(3): Specific considerations make mitigation and alternatives infeasible. Mitigation measures have been adopted to reduce this impact. The lead agency cannot ensure that these measures will reduce the impact to a less than significant level, due to economic, legal, social, and technological constraints. No feasible mitigation measures or project alternatives have been identified that would substantially reduce this impact.
6. Air Quality and Greenhouse Gas Emissions		
Impact 6.1: Construction of dairy digester and co-digester facilities within Region 5 would generate short-term emissions of criteria air pollutants: ROG, NOx, CO, SO_2, PM10, and PM2.5 that could contribute to existing nonattainment conditions and further degrade air quality.	**Measure 6.1a:** Applicants shall prepare and submit an Air Quality Technical Report as part of the environmental assessments for the development of future dairy digester or co-digester facilities on a specific project-by-project basis. The technical report shall include an analysis of potential air quality impacts (including a screening level analysis to determine if construction and operation related criteria air pollutant emissions would exceed applicable air district thresholds, as well as any health risk associated with TACs from all dairy digester or co-digester facility sources) and reduction measures as necessary associated with digester developments through the environmental review process. Preparation of the technical report should be coordinated with the appropriate air district and shall	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 6.1a-b is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local air districts, which have the responsibility and jurisdiction to regulate air emissions from digester facilities, would

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	identify compliance with all applicable New Source Review and Best Available Control Technology (BACT) requirements. The technical report shall identify all project emissions from permitted (stationary) and non-permitted (mobile and area) sources and mitigation measures (as appropriate) designed to reduce significant emissions to below the applicable air district thresholds of significance, and if these thresholds cannot be met with mitigation, then the individual digester project could require additional CEQA review or additional mitigation measures. **Measure 6.1b:** Applicants shall require construction contractors and system operators to implement the following Best Management Practices (BMPs) as applicable during construction and operations: • Facilities shall be required to comply with the rules and regulations from the applicable AQMD or APCD. For example, development of dairy digester and co-digester facilities in the SJVAPCD jurisdiction shall comply with the applicable requirements of Regulation VIII (Fugitive PM10 Prohibitions) and Rule 9510 (Indirect Source Review). • Use equipment meeting, at a minimum, Tier II emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, §2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site. • Comply with state regulations to minimize truck idling. • Maintain all equipment in proper working condition according to manufacturer's specifications. • Use electric equipment when possible. • Payment into an AQMD or APCD operated Voluntary Emission Reduction Agreement (VERA). • Incorporate fuel cells where feasible as an alternative to internal combustion engines, which generate NOx emissions, to generate energy from the biogas produced at dairy digester and co-digester facilities. • Where feasible as an alternative to internal combustion engines, which generate NOx emissions, use biogas from dairy manure digester and co-digester projects as a transportation fuel (compressed biomethane) or inject biomethane into the utility gas pipeline system.	coordinate with the facility on the air quality technical report. While the Central Valley Water Board will play a supporting role in confirming that the reports have been submitted to the local air districts as part of the General Order's NOI application process, the primary responsibility lies with the local air districts.

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
Impact 6.2: Pre-processing, digestion, and post-processing operational activities of dairy digester and co-digester facilities in Region 5 would result in emissions of criteria air pollutants at levels that could substantially contribute to a potential violation of applicable air quality standards or to nonattainment conditions.	**Measure 6.2:** Implement Mitigation Measures 6.1a and 6.1b.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 6.2 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, local air districts have the primary responsibility and jurisdiction over mitigation measure 6.1a-b.
Impact 6.3: Operation of dairy digester and co-digester facilities in Region 5 could create objectionable odors affecting a substantial number of people.	**Measure 6.3a:** Applicants for the development of digester facilities shall comply with appropriate local land use plans, policies, and regulations, including applicable setbacks and buffer areas from sensitive land uses for potentially odoriferous processes. **Measure 6.3b:** AD facilities that handle compostable material and are classified as a compost facility must develop an Odor Impact Minimization Plan (OIMP) pursuant to 14 CCR 17863.4. Otherwise, applicants shall implement a site-specific Odor Management Plan (OMP) as part of each application submitted to establish digester and co-digester facilities under the waste discharge regulatory program. The OMP will specifically address odor control associated with digester operations and will include: • A list of potential odor sources. • Identification and description of the most likely sources of odor. • Identification of potential, intensity, and frequency of odor from likely sources. • A list of odor control technologies and management practices that could be implemented to minimize odor releases. These management practices shall include the establishment of the following criteria as appropriate: - Establish time limit for on-site retention of undigested odiferous co-substrates (i.e., organic co-substrates must be put into the digester within 48 hours of receipt). - Provide negative pressure buildings for indoor unloading of odiferous co-digestion substrates. Treat collected foul air in a biofilter or air scrubbing system. - Establish contingency plans for operating downtime (e.g., equipment malfunction, power outage). - Manage delivery schedule to facilitate prompt handling of odorous	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measures 6.3a-b is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local air districts, local planning departments or local enforcement agencies (LEA), which have the responsibility and jurisdiction to regulate air emissions from digester facilities, would review the odor management plans. While the Central Valley Water Board will play a supporting role in confirming that the plans have been submitted as part of the General Order's NOI application process, the primary responsibility lies with the local air districts, planning departments and LEAs.

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FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	co-substrates. - Modification options for land application practices if land application of digestate results in unacceptable odor levels. - Protocol for monitoring and recording odor events. - Protocol for reporting and responding to odor events.	
Impact 6.4: Construction and operation of dairy digester and co-digester facilities in Region 5 could lead to increases in chronic exposure of sensitive receptors in the vicinity to certain toxic air contaminants from stationary and mobile sources.	**Measure 6.4a:** Implement Mitigation Measures 6.1a and 6.1b. **Measure 6.4b:** Based on the Air Quality Technical Report (specified in Measure 6.1a), if the health risk is determined to be significant on a project-by-project basis with DPM as a major contributor, then the applicants shall either use new diesel engines that are designed to minimize DPM emissions (usually through the use of catalyzed particulate filters in the exhaust) or retrofit older engines with catalyzed particulate filters, which will reduce DPM emissions by 85%. **Measure 6.4c:** H_2S contained in the biogas shall be controlled before emission to air can occur.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measures 6.4a-c are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local air districts, which have the responsibility and jurisdiction to regulate air emissions from digester facilities, would monitor facility compliance with this mitigation measure.
Impact 6.6: Development of dairy digester and co-digester facilities in Region 5, together with anticipated cumulative development in the area, would contribute to regional criteria pollutants.	**Measure 6.6:** Implement Mitigation Measures 6.1a and 6.1b.	Finding per Section 15091(a)(3): Specific considerations make mitigation and alternatives infeasible. Mitigation measures have been adopted to reduce this impact. The lead agency cannot ensure that these measures will reduce the impact to a less than significant level, due to economic, legal, social, and technological constraints. No feasible mitigation measures or project alternatives have been identified that would substantially reduce this impact.
7. Land Use and Agricultural Resources		
Impact 7.4: Implementation of the project could result in the permanent conversion of land designated by the Department of Conservation FMMP as Prime Farmland, Farmland of Statewide Importance or Unique Farmland.	**Measure 7.4:** Whenever feasible, project related facilities off-site of a dairy should not be sited on Important Farmland as defined by the California Department of Conservation's Farmland Mapping and Monitoring Program.	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 7.4 has been incorporated into the

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
		General Order's NOI application process which requires the applicant to submit an over-riding justification for the choice of location if projected related facilities off-site of a dairy are sited on Important Farmland as defined by the California Department of Conservation's Farmland Mapping and Monitoring Program.
8. Transportation and Traffic		
Impact 8.1: Construction of dairy digester and co-digester facilities would intermittently and temporarily increase traffic levels and traffic delays due to vehicle trips generated by construction workers and construction vehicles on area roadways.	**Measure 8.1:** The contractor(s) will obtain any necessary road encroachment permits prior to installation of pipelines within the existing roadway right-of-way. As part of the road encroachment permit process, the contractor(s) will submit a traffic safety / traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. Elements of the plan will likely include, but are not necessarily limited to, the following: • Develop circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone. • To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours. • Limit lane closures during peak traffic hours to the extent possible. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress. • Limit, where possible, the pipeline construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone. • Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. Use flaggers and/or signage to safely direct traffic through construction work zones. • Coordinate with facility owners or administrators of sensitive land uses such as police and fire stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 8.1 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local agencies, which have the responsibility and jurisdiction over roads and encroachment permits, would review the plans and encroachment permit applications. While the Central Valley Water Board will play a supporting role in confirming that the plans and applications have been submitted as part of the General Order's NOI application process, the primary responsibility lies with the local agencies.

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FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	• To the maximum extent feasible, maintain access to private driveways located within construction zones. • Coordinate with the local public transit providers so that bus routes or bus stops in work zones can be temporarily relocated as the service provider deems necessary.	
Impact 8.3: Construction and operation of dairy digester and co-digester facilities could potentially cause traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways, and could increase traffic hazards due to possible road wear or to accident spills of manure, or co-digestion feedstocks or digestate.	**Measure 8.3a:** Implement Measure 8.1, which stipulates actions required of the contractor(s) to reduce potential traffic safety impacts to a less-than-significant level. **Measure 8.3b:** Prior to construction, the contractor(s), in cooperation with the agencies having jurisdiction over the affected roadways, will survey and describe the pre-construction roadway conditions on rural roadways and residential streets. Within 30 days after construction is completed, the affected agencies will survey these same roadways and residential streets in order to identify any damage that has occurred. Roads damaged by construction will be repaired to a structural condition equal to the condition that existed prior to construction activity.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measures 8.3 a-b are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described in Attachment A of the Final EIR, local agencies issuing encroachment permits and other agencies having jurisdiction over affected roadways have the primary responsibility and jurisdiction over this mitigation measure.EIR.
Impact 8.4: Construction of dairy digester and co-digester facilities could intermittently and temporarily impede access to local streets or adjacent uses (including access for emergency vehicles), as well as disruption to bicycle/pedestrian access and circulation.	**Measure 8.4:** Implement Measure 8.1, which stipulates actions required of the contractor(s) to reduce potential access impacts to a less-than-significant level.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 8.4 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, local agencies have the primary responsibility and jurisdiction over mitigation measure 8.1
Impact 8.5: Construction and operation of dairy digester and co-digester facilities could contribute to cumulative impacts to traffic and transportation (traffic congestion, traffic safety, and emergency vehicle access).	**Measure 8.5a:** Prior to construction, for installation of pipelines in existing roadways, the project sponsor will coordinate with the appropriate local government departments, Caltrans, and utility districts and agencies regarding the timing of construction projects that would occur near project sites. Specific measures to mitigate potential significant impacts will be determined as part of the interagency coordination, and could include measures such as employing flaggers during key construction periods, designating alternate haul routes, and providing more outreach and community noticing. **Measure 8.5b:** Implement Mitigation Measures 8.1 and 8.3b.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measures 8.5 a-b are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described in Attachment A of the Final EIR, local agencies, Caltrans, and utility districts have the primary responsibility and jurisdiction over this mitigation measure. While the Central Valley Water Board will play a supporting role in confirming that coordination has occurred, the primary responsibility lies with the aforementioned agencies.

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Impact	Mitigation Measure	Finding
9. Biological Resources		
Impact 9.1: The project could impact special-status plant or wildlife species or their habitats.	**Measure 9.1a:** The project applicant or agency(s) responsible shall document that site assessment report for dairy digester and co-digester facilities to be constructed (including the location of digestate application) has been submitted to CDFG for its review. This report shall be prepared by a qualified biologist. It shall evaluate the project site's potential to support special-status plant and wildlife species (including critical habitat) and whether special-status species could be affected by dairy digester and co-digester development, including construction and operations. If there are no special-status species or critical habitat present, no additional mitigation would be required. **Measure 9.1b:** If the site assessment determines that special-status species could be affected by facilities development, the project would not be eligible as part of the project (for the Central Valley Water Board discharge permit) unless the applicant submits a plan, prepared by a qualified biologist, to mitigate or avoid any significant impacts on special-status species. This plan must be forwarded to the appropriate regional office of the CDFG, the Endangered Species Unit of the USFWS in Sacramento, and/or NMFS for review and approval of the mitigation strategy, when appropriate. If the site assessment determines that a State or federally listed species would be affected by facilities development, the project applicant shall consult with CDFG, the Endangered Species Unit of the USFWS in Sacramento, and/or NMFS, as appropriate.	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 9.1a-b has been incorporated into the General Order's NOI application process which requires the applicant to provide documentation that it has submitted biological site assessment report to the CDFG for its review and approval. If the site assessment report determines that special-status species could be affect by facilities development then the NOI requires the applicant to provide documentation that it has submitted a plan to mitigate or avoid any significant impacts on special-status species to the CDFG, the Endangered Species Unit of the USFWS in Sacramento, and/or NMFS, as appropriate, for their review and approval.
Impact 9.2: The project could result in impacts on biologically unique or sensitive natural communities.	**Measure 9.2a:** The project applicant or agency(s) responsible shall submit a site assessment report prepared by a qualified biologist that determines if the project is likely to affect biologically unique or sensitive natural communities. This information could be included in the report prepared under Mitigation Measure 9.1a. If there are no biologically unique or sensitive natural communities present, no further mitigation is required. **Measure 9.2b:** If biologically unique or sensitive natural communities are present and would be disturbed, the project would not be authorized under the project unless the applicant or agency(s) responsible submits a plan to avoid or mitigate for any significant impacts on biologically unique or sensitive natural communities and agrees to implement the mitigation. This report must be forwarded to the appropriate regional office of the CDFG and/or the Endangered Species Unit of the USFWS in Sacramento (as appropriate) for review and approval of the mitigation strategy. As described above, this portion of the report could be incorporated into the report prepared under Mitigation Measure 9.1a.	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 9.2a-b has been incorporated into the General Order's NOI application process which requires the applicant to provide documentation that it has submitted the biological site assessment report to the CDFG for its review and approval. If the site assessment report determines that the project is likely to affect biologically unique or sensitive natural communities then the NOI

TABLE 1
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Impact	Mitigation Measure	Finding
		requires the applicant to provide documentation that it has submitted a plan to avoid or mitigate any significant impacts on special-status species to the CDFG, the Endangered Species Unit of the USFWS in Sacramento, and/or NMFS, as appropriate, for its review and approval
Impact 9.3: The project could result in impacts on waters of the State and/or the U.S., including wetlands.	**Measure 9.3a:** The project applicant or agency(s) responsible shall submit a site assessment report prepared by a qualified biologist that evaluates if the project is likely to affect waters of the State and/or U.S., including wetlands. This information could be included in the report prepared under Mitigation Measure 9.1a. If there are no waters present, no further mitigation would be required. **Measure 9.3b:** If waters of the State and/or U.S. are present in the project area, the project applicant or agency(s) responsible shall either re-design the project to avoid affecting the waters, or obtain the appropriate permits to allow for the impact. For waters that cannot be avoided, the permit process shall start with the preparation of a jurisdictional wetland delineation, prepared by a qualified biologist that will be submitted to the Corps for verification. Following verification, if jurisdictional waters occur within the project site, the project applicant or agency(s) responsible shall obtain and comply with federal and State permit requirements. This could include obtaining a Clean Water Act Section 404 permit, Section 401 Water Quality Certification or Waiver, a Section 1602 Streambed Alteration Agreement, and any other applicable permits.	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 9.3a-b has been incorporated into the General Order's NOI application process which requires the biological site assessment report to determine if the project is likely to affect waters of the state and/or United States including wetlands. If waters of the State and/or U.S. are present in the project area, NOI requires the applicant to either re-design the project to avoid affecting the waters, or submit the appropriate permits to allow for the impact.
Impact 9.6: Development of dairy digester and co-digester facilities could contribute to cumulative impacts to biological resources.	**Measure 9.6:** Implement Measures 9.1a, 9.1b, 9.2a, 9.2b, 9.3a, and 9.3b.	Finding per Section 15091(a)(1): Miitigation has been incorporated into Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. As described above, mitigation measures 9.1a-b, 9.2a-b, and 9.3a-b have been incorporated into the General Order.
10. Hazards and Hazardous Materials		
Impact 10.1: Construction of dairy digester and co-digester facilities could result in the potential exposure of construction workers, the public and	**Measure 10.1:** Prior to final project design and any earth disturbing activities, the applicant or agency(s) responsible shall conduct a standard "Phase I Type" electronic record search. If no incidents are identified within a quarter mile	Finding per Section 15091(a)(1): Miitigation Has Been Incorporated into Project. Changes or alterations have been required

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Impact	Mitigation Measure	Finding
the environment to preexisting soil and/or groundwater contamination.	of the construction area, standard construction practices can be implemented. If the record search identifies soil or water quality contamination open cases within a quarter mile of the construction area, a Phase I Environmental Site Assessment (ESA) shall be prepared by a Registered Environmental Assessor (REA) or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site; specifically in the area proposed for construction of dairy digester or co-digester facilities. The Phase I ESA shall include a review of appropriate federal and State hazardous materials databases, as well as relevant local hazardous material site databases for hazardous waste on-site and off-site locations within a one quarter mile radius of the project site. This Phase I ESA shall also include a review of existing or past land uses and areal photographs, summary of results of reconnaissance site visit(s), and review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater. If no contaminated soil or groundwater is identified or if the Phase I ESA does not recommend any further investigation then the project applicant or agency(s) responsible shall proceed with final project design and construction. OR If existing soil or groundwater contamination is identified and if the Phase 1 ESA recommends further review, the applicant or agency(s) responsible shall retain a REA to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations prior to any earth disturbing activities. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.	in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 10.1 has been incorporated into the General Order's NOI application process which requires the applicant to submit a standard "Phase I Type" electronic record search. If no incidents are identified within a quarter mile of the construction area, standard construction practices can be implemented. If the record search identifies soil or water quality contamination open cases within a quarter mile of the construction area, a Phase I Environmental Site Assessment shall be prepared.
Impact 10.6: Installation of biogas pipelines in public rights-of-way could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	**Measure 10.6:** Implement Mitigation Measure 8.1.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 10.6 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local agencies, which have the responsibility and jurisdiction over roads

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Impact	Mitigation Measure	Finding
		and encroachment permits, would have jurisdiction over mitigation measure 8.1. While the Central Valley Water Board will play a supporting role in confirming that plans and applications have been submitted as part of the General Order's NOI application process, the primary responsibility lies with the local agencies.
11. Aesthetic Resources		
Impact 11.1: Implementation of the project, including operation of dairy digester and co-digestion facilities, could result in impacts to scenic highways and/or scenic vistas.	**Measure 11.1a:** Centralized biogas processing facilities shall be sited in locations that do not conflict with local polices for preservation of vistas or scenic views. **Measure 11.1b:** When feasible considering the scale of the facilities and the site specific topography, site specific landscape design, including berms and/or tree rows, shall be constructed in order to minimize potentially sensitive views of both digester facilities at dairies or off dairies at centralized facilities. **Measure 11.1c:** Centralized biogas processing facilities shall be designed similarly in massing and scale to other nearby agricultural buildings in agricultural areas, in order to retain the character of the surrounding visual landscape.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measures 11.1a-c are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local planning and building departments, which have the responsibility and jurisdiction over local regulation regarding scenic resources, would review visual assessment reports. While the Central Valley Water Board will play a supporting role in confirming that the a visual assessment report has submitted as part of the General Order's NOI application process, the primary responsibility lies with local planning and building departments.
Impact 11.2: Construction of the project could result in impacts to scenic highways and/or scenic vistas.	**Measure 11.2:** The project shall incorporate into all construction contracts for the proposed project and ensure implementation of the following measures: • Main construction staging areas and the storage of large equipment shall be situated on individual sites in such a manner to minimize visibility to nearby receptors. As feasible, staging areas and storage shall occur away from heavily traveled designated scenic roadways, in areas where it will be least visible from the surrounding roads. • Construction staging areas shall be onsite and remain clear of all trash, weeds and debris, etc. Construction staging areas shall be located in areas that limit visibility from scenic roadways and sensitive receptors to the extent feasible.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 11.2 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local building and planning departments, which have the responsibility and jurisdiction over local regulation regarding scenic resources, would review visual assessment reports. While the Central

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Impact	Mitigation Measure	Finding
		Valley Water Board will play a supporting role in confirming that the a visual assessment report has submitted as part of the General Order's NOI application process, the primary responsibility lies with local building and planning departments.
Impact 11.3: Implementation of the project could result in substantial creation of or change in light or glare.	**Measure 11.3:** Whenever possible, flares shall be situated on individual sites in such a manner to minimize visibility to nearby receptors. Site specific design shall discourage placement of flares at higher elevations, or within the line of site of nearby residential buildings or scenic highways. In the event that site design does not provide adequate coverage, an enclosed flare design shall be used or landscaping, such as berms or tree rows, shall be constructed to minimize light impacts.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 11.3 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local building and planning departments, which have the responsibility and jurisdiction over local regulation regarding scenic resources, would review visual assessment reports. While the Central Valley Water Board will play a supporting role in confirming that the a visual assessment report has submitted as part of the General Order's NOI application process, the primary responsibility lies with local building and planning departments.
Impact 11.4: Development of dairy digester and co-digester facilities could contribute to cumulative impacts to aesthetics.	**Measure 11.4:** Implement Mitigation Measures 11.1a, 11.1b, 11.1c, 11.2, and 11.3.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of this mitigation measure is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, other public agencies have the primary responsibility and jurisdiction over mitigation measures 11.1a-c, 11.2, and 11.3.
12. Cultural Resources		
Impact 12.1: Construction of dairy digester and co-digester facilities could result in the adverse change in the significance of a historical or archaeological resource, pursuant to §15064.5.	**Measure 12.1a:** In order to determine whether a project may cause a significant impact to cultural resources, and therefore, have an adverse effect on the environment, the Central Valley Water Board shall require each application submitted for a discharge permit for a digester or co-digester	Finding per Section 15091(a)(1): Miitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order

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Impact	Mitigation Measure	Finding
	facility to identify the project's potential impacts to cultural resources. Prior to ground-disturbing activities, the project applicant shall retain a qualified archaeologist to (1) conduct a record search at the appropriate information center of the California Historical Resources Information System (CHRIS) to determine whether the project area has been previously surveyed and whether cultural resources were identified; and (2) request a sacred lands search from the NAHC. The results of the record search and sacred lands search shall be included in the Cultural Resources Inventory Report provided to the Central Valley Water Board. In the event the CHRIS records search indicates that no previous survey has been conducted, the qualified archaeologist shall recommend whether a survey is warranted to satisfy the requirements of CEQA based on the sensitivity of the project area for cultural resources. If, for example, the existing dairy or agricultural land proposed for establishment of a digester or co-digester facility was constructed entirely on fill, as shown by original and final contour drawings, a surface survey for archaeological resources would not be warranted. Similarly, a surface survey may not be warranted if the project area has been extensively disturbed by dairy or agricultural use. For projects that constitute federal undertakings, as described in the Federal Agencies section of the Introduction (Chapter 2), the cultural resources study shall be prepared in accordance with Section 106 of the NHPA. The cultural resources study and inclusive mitigation measures shall form the basis for the cultural resources component of the project-level environmental documentation prepared for the project under Section 106. If the survey, CHRIS record search, or NAHC search indicate cultural resources are located within a project area, the Cultural Resources Inventory Report shall include an assessment of the significance of the resources according to applicable federal, state, and local significance criteria. If the cultural resources are determined significant historical resources, the Lead Agency (usually the Central Valley Water Board) must review and approve the applicant's proposed treatment measures to ameliorate any "substantial adverse change" in the significance of each historical resource, in consultation with a qualified archaeologist or architectural historian, and other concerned parties. Treatment measures may include preservation through avoidance or project redesign, incorporation within open space or conservation easements, data recovery excavation of archaeological resources, formal documentation of built environment resources, public interpretation of the resource, or other appropriate treatment, and may be described in a project-level Cultural	which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measures 12.1a-b have been incorporated into the General Order's NOI application process which requires submittal of a Cultural Resources Inventory Report to identify if cultural resources are in the project area, determine if those resources are significant, and if there are significant historical resources; propose treatment measures. The NOI also requires the applicant indicate that they will require construction contractors performing ground-disturbing activities at their digester facility to implement inadvertent discovery measures for cultural resources.

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FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	Resources Mitigation Plan included in the Cultural Resources Inventory Report to be approved by the Lead Agency. Should the project area contain standing, built environment resources now 50 years of age, a qualified architectural historian shall be retained to evaluate the integrity and significance of the resource(s) unless the building(s) or structure(s) were covered in the existing survey report and determined not significant according to applicable federal, state, and local criteria. The results of that evaluation shall be included in the Cultural Resources Inventory Report. If cultural resources identified within a project area are neither a historical resource nor unique archaeological resource, there would be no significant effect to the environment and no further treatment of those known resources would be required. **Measure 12.1b:** Inadvertent discovery measures for cultural resources shall be implemented during all construction activities within the project area. Measures shall include procedures for discovery and protection of cultural resources, including human remains, during construction or earth-disturbing activities. Within project areas of identified archaeological sensitivity, discovery measures would include: (1) a worker education course for all construction personnel; (2) monitoring of all earth-disturbing activities by a qualified archeologist; and (3) procedures for discovery of cultural resources, including human remains, during construction or ground-disturbing activities if an archaeological monitor is not present. Monitoring by a Native American with knowledge in cultural resources may also be required, as appropriate. Monitoring within recent fill deposits or non-native soil would not be required. All construction or ground-disturbing activities shall be halted within 100 feet of a cultural resources discovery, including human remains, whether or not a monitor is present, until a qualified professional archaeologist can evaluate the find. If the find is determined to be a significant historical resource and cannot be avoided, then impacts on that resource will require mitigation. During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project area. If known or suspected human remains are discovered, in addition to halting all construction or ground-disturbing activities within 100 feet, the following steps must be taken before construction activities may be resumed within the stop-work area:	

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	• The County Coroner has been immediately notified and has determined that no investigation of the cause of death is required; and • If the remains are of Native American origin, the following steps have been taken: o The applicant has 24 hours to notify the NAHC, who should, in turn, notify the person identified as the proper descendant of any human remains. Under existing law, the descendant then has 24 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. o If the NAHC is unable to identify a descendant or if the descendant does not make recommendations within 24 hours, the applicant shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. o Should the applicant not accept the descendant's recommendations, the applicant or the descendant may, under existing law, request mediation by the NAHC.	
Impact 12.2: Construction of dairy digester and co-digester facilities could result in the disruption of human remains, including those interred outside formal cemeteries.	**Measure 12.2:** Implement inadvertent discovery measures for the protection of cultural resources, including human remains (Measure 12.1b).	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. Specifically, mitigation measure 12.2 has been incorporated into the General Order's NOI application process which requires the applicant indicate that they will require construction contractors performing ground-disturbing activities at their digester facility to implement inadvertent discovery measures for cultural resources, including human remains.
Impact 12.3: Construction of dairy digester and co-digester facilities could result in direct or indirect disturbance or destruction of a unique paleontological resource or site or unique geologic feature.	**Measure 12.3:** If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the lead agency and in conformance with Society of Vertebrate	Finding per Section 15091(a)(1): Mitigation has been incorporated into the Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	Paleontology Guidelines (SVP, 1995; SVP, 1996). Additional guidance may be found in *Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources* (SVP 2010).	in the Final EIR. Specifically, mitigation measure 12.3 has been incorporated into the General Order's NOI application process which requires the applicant indicate that they will require construction contractors performing ground-disturbing activities at their digester facility to implement inadvertent discovery measures for paleontological resources.
Impact 12.4: Development of dairy digester and co-digester facilities could contribute to cumulative impacts related to archaeological, historical, and/or paleontological resources.	**Measure 12.4:** Implement Measures 12.1a, 12.1b, 12.2, and 12.3.	Finding per Section 15091(a)(1): Miitigation has been incorporated into Project. Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. As described above, mitigation measures 12.1a, 12.1b, 12.2 and 12.3 have been incorporated into the General Order.
13. Geology		
Impact 13.1: The project could expose people to injury and structures to damage resulting from seismic activity.	**Measure 13.1:** Prior to construction, project applicants or agency(s) responsible shall ensure that dairy digester facilities are designed and construction techniques are used that comply with relevant local, State and federal regulations and building code requirements. Requirements could include, but might not be limited to: • Preparation of site-specific soil and geotechnical engineering studies performed by a licensed professional including, but not limited to, a geologist, engineering geologist, certified soil scientist, certified agronomist, registered agricultural engineer, registered civil or structural engineer, and/or certified professional erosion and sediment control specialist with expertise in geotechnical engineering issues who is registered and/or certified in the State of California, to determine site specific impacts and to recommend site specific mitigations. The site specific soil and geotechnical engineering studies shall be submitted to the all appropriate State and local regulatory agencies including, but not limited to, the CVRWQCB and the city or county engineering department for review and approval. The project applicant or agency(s) responsible shall implement all	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of this mitigation measure is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local building departments, which have the responsibility and jurisdiction over building permits, would have jurisdiction over mitigation measure 13.1. While the Central Valley Water Board will play a supporting role in confirming that construction plan reports have been submitted as part of the General Order's NOI application process, the primary responsibility lies with the local agencies.

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
	feasible recommendations addressing potential seismic hazards and soil constraints; and • Implementation of CBC design requirements	
Impact 13.2: The project could expose people to injury and structures to damage resulting from unstable soil conditions.	**Measure 13.2:** Implement Mitigation Measure 13.1.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of this mitigation measure is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, local building departments have the primary responsibility and jurisdiction over mitigation measure 13.1.
14. Noise		
Impact 14.1: Construction of dairy digester and co-digester facilities could temporarily increase noise levels at nearby sensitive receptor locations or result in noise levels in excess of standards in local general plans, noise ordinance, or other applicable standards.	**Measure 14.1a:** Construction activities shall be limited to daytime hours, between 7 a.m. and 6 p.m., Monday through Saturday, or an alternative schedule established by the local jurisdiction. **Measure 14.1b:** Construction equipment noise shall be minimized by muffling and shielding intakes and exhaust on construction equipment to a level no less effective than the manufacture's specifications, and by shrouding or shielding impact tools. **Measure 14.1c:** Construction contractors within 750 feet of sensitive receptors shall locate fixed construction equipment, such as compressors and generators, and construction staging areas as far as possible from nearby sensitive receptors. **Measure 14.1d**: Construction contractors shall comply with all local noise ordinances and regulations.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementations of mitigation measures 14.1a-d are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local building and planning departments, which have the responsibility and jurisdiction over local regulation regarding construction and operational noise levels, would review an acoustic report that addresses construction and operational noise levels. While the Central Valley Water Board will play a supporting role in confirming that the acoustic report has submitted as part of the General Order's NOI application process, the primary responsibility lies with local building and planning departments.

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
Impact 14.2: Noise from operation of dairy digester and co-digester facilities or centralized facilities could substantially increase ambient noise levels at nearby land uses or result in noise levels in excess of standards in local general plans, local noise ordinances, or other applicable standards.	**Measure 14.2:** Any continuous equipment operating at night within 1,000 feet of a sensitive receptor must be enclosed. Furthermore, an acoustic study and follow-up measurements must be performed (after construction) to prove that the noise from any continuous equipment operating at night would comply with all local noise regulations. If no local regulations are available, noise levels must be below 45 dBA at the nearest sensitive receptor. If the sound level exceeds local regulations, or 45 dBA if applicable, additional sound-proofing shall be installed to meet the required sound level.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of mitigation measure 14.2 is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. Specifically, Appendix A of the Final EIR describes the expectation that local building and planning departments, which have the responsibility and jurisdiction over local regulation regarding construction and operational noise levels, would review an acoustic report that addresses construction and operational noise levels. While the Central Valley Water Board will play a supporting role in confirming that the acoustic report has submitted as part of the General Order's NOI application process, the primary responsibility lies with local building and planning departments.
Impact 14.4: Development of dairy digester and co-digester facilities could result in a cumulative increase in noise levels.	**Measure 14.4a:** Implement Mitigation Measures 14.1a through Measure 14.1d and Measure 14.2, above.	Finding per Section 15091(a)(2): Responsibility of other agencies. Implementation of this mitigation measure is within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, local agencies have the primary responsibility and jurisdiction over mitigation measures 14.1a-d and 14.2.
15. Public Services		
Impact 15.7: The project could result in the construction new energy supplies and could require additional energy infrastructure.	**Measure 15.7:** Implement Mitigation Measures for construction of energy infrastructure including Mitigation Measures 6.1b, 9.1a, 9.1b, 9.2a, 9.2b, 9.3b, 12.1b, 12.2, 12.3, and 14.1a-c.	Finding per Section 15091(a)(1) and 15091(a)(2): Changes or alterations have been required in, or incorporated into, the General Order which would avoid or substantially lessen the significant environmental effects as identified in the Final EIR. As described above, mitigation measures 9.1a, 9.1b, 9.2a, 9.2b, 9.3b, 12.1b,

TABLE 1
FINDINGS FOR GENERAL ORDER FOR CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

Impact	Mitigation Measure	Finding
		12.2, and 12.3 have been incorporated into the General Order. The remaining mitigation measures are within the responsibility and jurisdiction of other public agencies that can and should implement the measure. As described above, local agencies have the primary responsibility and jurisdiction over mitigation measures 6.1b and 14.1a-c.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2011-0039

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

The California Regional Water Quality Control Board, Central Valley Region (hereafter, Central Valley Water Board), finds that:

SCOPE OF COVERAGE OF THIS ORDER

1. This Order serves as a general waste discharge requirements order (Order) for discharges from centralized dairy manure anaerobic digesters or centralized dairy manure co-digesters not situated on an operating dairy.

2. 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 as described in Finding 3., below. These individuals or entities are hereinafter referred to as Discharger(s). Multiple Dischargers associated with the same facility must jointly enroll under this Order by submitting a combined Notice of Intent (NOI).

3. Dairy operations that are in compliance with Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2007-0035 (Dairy General Order), or an individual Waste Discharge Requirements Order (WDRs) that supply dairy manure (liquid, solid, or both) to a centralized dairy manure-only digester and receive back from the centralized dairy manure-only digester a lesser or equal mass of waste of the same character are not subject to this Order.

4. Dairy operations that supply dairy manure to a centralized dairy manure-only digester and receive back from the centralized dairy manure-only digester a greater mass of waste or waste of a different character (solid or liquid) are subject to this Order for the discharge of the returned waste. Such a dairy is required to retain coverage under the Dairy General Order or Individual WDRs for the remaining waste discharged at the facility. Under this scenario, both the dairy accepting the waste and the centralized digester returning the waste must be enroll under this Order.

5. When a dairy is covered by both this Order and the Dairy General Order or an individual WDRs, the land application requirements of this Order require the dairy to account for salts and nutrients from both waste generated on-site and imported digester or co-digester waste in the loading calculations. Land applications of imported digester or co-digester waste must meet the requirements of a certified Nutrient Management Plan, Salt Minimization Plan, and other mitigation measures identified in *Dairy Manure Digester and Co-digester Facilities, Program Environmental Impact Report* (certified by the Central Valley Water Board on 10 December 2010) are implemented, and as described in this Order. The Dairy General Order or individual WDRs will continue to regulate the dairy operations and discharges of dairy waste to the land application areas not used for the application of digester or co-digester waste.

6. When a dairy is covered by both this Order and the Dairy General Order or an individual WDRs, the dairy production facilities not used to store or transport centralized digester waste must meet the requirements of the Dairy General Order or individual WDRs. Any facility used to store or transport centralized digester wastes must meet the requirements of this Order.

REASON FOR THE CENTRAL VALLEY WATER BOARD ISSUING THIS ORDER

7. Centralized dairy manure anaerobic digester/co-digester facilities produce wastes that have the potential to impact the quality of waters of the State.

8. The Central Valley Water Board's 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 nuisances, is found in the Porter-Cologne Water Quality Control Act (California Water Code Division 7).

9. California Water Code (CWC) Section 13260 requires any person discharging waste, or proposing to discharge waste within the Central Valley Region, that could affect the quality of the waters of the State (which includes both surface water and groundwater), to file a report of waste discharge with the Central Valley Water Board.

10. The Central Valley Water Board is required 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.

11. 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, products, or by-products such as manure, bio-gas cleanup waste, feedstock, or digester solids.

BACKGROUND

12. On 25 April 2006, the Governor issued an Executive Order S-06-06, which found that sustained biomass development offers strategic energy and economic, social, and environmental benefits to California while creating jobs through increased private investment within the state. Executive Order S-06-06 also established targets for the use and production of biofuels and biopower and instructed State agencies to work together to advance biomass programs in California.

13. The California Energy Commission's July 2006 *Bioenergy Action Plan for California* (Publications Number CEC-600-2006-010) recognizes that key challenges to the development of bioenergy in California are that its benefits are not adequately recognized or compensated by the market, and that bioenergy faces a range of challenges and impediments, many of which can be addressed by State action. The Bioenergy Action Plan recommends that California consider ways to simplify regulatory hurdles to siting and permitting of bioenergy projects.

14. On 18 September 2007, the State Water Resources Control Board (State Water Board) adopted Resolution No. 2007-0059, which resolved that the State Water Board *"supports implementation of the 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; and, work … to ensure that adequate criteria for water protection and water quality are put into place on agricultural and forest lands in California."*

15. On 17 November 2008, the Governor issued Executive Order S-14-08 to streamline California's renewable energy project approval process and to establish

the State's Renewable Portfolio Standard target of 33 percent renewable energy by 2020. This Executive Order directs all State regulatory agencies to give priority to renewable energy projects and to facilitate the timely permitting of these projects.

16. 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. Biogas can be cleaned of impurities and injected directly into transmission pipelines, or can be used to generate other forms of energy.

17. This Order addresses the recommendations of the *Bioenergy Action Plan for California*, and Executive Orders S-06-06 and S-14-08. It encourages bioenergy projects involving dairy manure digesters and co-digesters by streamlining the Central Valley Water Board's permitting process through the use of general waste discharge requirements for centralized digester and co-digester facilities.

18. Each Discharger covered by this Order shall submit an application fee equal to the annual fee, pursuant to CWC section 13260. Discharges from centralized dairy manure digesters/co-digesters are considered to be Category II discharges (discharges that could impair the designated beneficial uses, cause short-term violations of water quality objectives, violate secondary drinking water standards, etc.), with a complexity category of (c). Annual fees for this discharge classification are set forth in Section 2200 of Title 23 of the California Code of Regulations.

19. To obtain coverage under this Order, a completed application packet consisting of a Facility Information Report (FIR), a Notice of Intent (NOI) and the appropriate application fee must be submitted to the Central Valley Water Board for each project. Once a completed application packet is received, Central Valley Water Board staff will evaluate the project to determine if it is suitable for regulation under this Order. Only after a determination of applicability is made will the Discharger(s) be issued a Notice of Applicability (NOA) by the Central Valley Water Board Executive Officer. Only applicants (Dischargers) who submit a complete FIR, NOI, and application fee, and are issued a Notice of Applicability are authorized to discharge waste to land in accordance with the terms and conditions of this Order.

CENTRALIZED DAIRY MANURE DIGESTER OR CO-DIGESTER FACILITIES

20. Centralized dairy manure digester/co-digester facilities generally consist of a production area(s) and land application area(s) which may be situated on the digester/co-digester facility or on a separate operation governed by a waste water agreement. The production area(s) may include the digester/co-digester, feed and feedstock storage areas, wastewater retention ponds, digestate (digester solid residuals) storage areas, biogas clean-up areas, storm water retention ponds, and pumps and piping to distribute waste to the land application areas for nutrient

21. Centralized dairy manure digesters and co-digesters generally consist of one of three basic types of digester systems, although many variations and gradations between these basic types exist. The three basic types include the following:

    a. ambient-temperature anaerobic covered lagoons,

    b. plug-flow digesters, and

    c. complete mix systems.

22. Anaerobic digestion is the biological decomposition of organic matter in the absence of molecular oxygen. This Order regulates both manure digestion and co-digestion processes, which differ according to feedstock. The anaerobic digestion process results in the production of biogas, digester solid residuals, and process wastewater. The biogas consists primarily of methane (CH_4), which can be used for energy, and carbon dioxide (CO_2), with small amounts of hydrogen sulfide (H_2S), and ammonia (NH_3). Typically biogas is saturated with water vapor and may have trace amounts of hydrogen (H_2), nitrogen (N_2), oxygen (O_2), dust and siloxane (compounds containing alternating silicon and oxygen atoms, usually with one or more organic groups attached to each silicon atom). The residual products from anaerobic digestion are process wastewater and digestate. The anaerobic digestion process occurs naturally in marshes, wetlands, and is the principal decomposition process in landfills.

CENTRALIZED DAIRY MANURE DIGESTER OR CO- DIGESTER FACILITIES IMPACTS ON WATER QUALITY

23. Centralized dairy manure digester/co-digester wastes, when inadequately controlled, can affect surface water quality. This Order prohibits discharges of waste and/or storm water to surface water from the production area, wastewater to surface waters from land application areas, and storm water to surface water from a land application area where dairy or digester process wastewater or digestate has been applied unless the land application area has been managed consistent with a certified Nutrient Management Plan. When such discharges of storm water occur, this Order requires the Discharger to monitor these discharges

24. Centralized dairy manure digester/co-digester wastes, when inadequately controlled, can affect groundwater quality. This Order requires that each FIR and NOI submitted for a proposed centralized dairy manure digester/co-digester facility be reviewed prior to issuance of an NOA. If in reviewing the FIR and NOI, Central

Valley Water Board staff find that the proposed discharge will pose a threat of contributing to or causing exceedances of water quality objectives, the project applicant will be required to minimize the potential water quality impacts of the project by modifying the proposed discharge activities or providing additional information to verify that the proposed discharge will not cause or contribute to an exceedances of water quality objectives or background water quality, whichever is greater. Verification that the proposed project will not cause or contribute to water quality pollution will require that sufficient information be submitted by a qualified professional engineer, professional geologist, or other qualified professional such that Central Valley Water Board staff can make a finding that the proposed discharge can comply with the provisions of this Order. Modifications to the proposed facility may be necessary for compliance with provisions of the Order. Additional information beyond that required by the FIR and NOI may be needed to determine whether the project can comply with the Order. Additional information may include, but is not limited to the following:

a. Additional groundwater monitoring data in areas where local hydrogeologic conditions could make the groundwater susceptible to contamination;

b. Identification whether the proposed centralized dairy manure digester/co-digester facility is within an area where California Department of Public Health's, Drinking Water Source Water Assessment and Protection (DWSWAP) Program setback requirements are implemented for source protection for both municipal and domestic wells; and;

c. Information about any unique local site and hydrogeologic conditions encountered in the design phase of the project and/or other groundwater quality management or regulatory programs which are currently active in the area.

25. This Order requires that waste generated at a centralized dairy manure digester/co-digester facility that can affect groundwater quality may only be applied to land application areas in accordance with a site specific Nutrient Management Plan (NMP) and within specified limits for non-nutrient salts.

26. This Order requires the centralized dairy manure digester/co-digester operators to prepare and submit a Waste Management Plan to ensure that the production area facilities are designed, constructed, operated and maintained so that wastes generated by the facilities are managed to prevent conditions of nuisance or adverse impacts to groundwater and surface water quality.

27. No set of waste management practices has been demonstrated to be protective of groundwater quality in all circumstances. Since groundwater monitoring is the most direct way to determine if management practices for centralized dairy manure digester/co-digester facilities are protective of groundwater quality, Monitoring and

Reporting Program No. R5-2011-0039, which is attached to and made part of this Order, requires groundwater monitoring to determine if the digester facility is in compliance with the groundwater limitations contained in this Order. If an approved representative groundwater monitoring program exists, and the Discharger can demonstrate that it applies to the proposed project, the Executive Officer may allow the Discharger to use data gathered from the representative groundwater monitoring program to substitute for some or all of the required groundwater monitoring.

REGULATORY CONSIDERATIONS

28. The *Water Quality Control Plan for the San Joaquin and Sacramento River Basins*, Fourth Edition (San Joaquin and Sacramento River Basins Plan) and the *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition (Tulare Lake Basin Plan) designate beneficial uses, establish water quality objectives, and contain implementation plans and policies for protecting waters of the State within the basins.

29. The Basin Plans establish narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective, in summary, requires that waters of the State (surface and 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.

30. 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 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 groundwater degradation until there is a long-term solution to the salt imbalance.

31. 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. This Order requires the Discharger to complete a Salinity Minimization Plan (SMP) to identify sources of salinity in the discharge and measures available to minimize the concentration and mass loading of salinity. This Order may be reopened in the future to incorporate applicable recommendations from the CV-SALTS management program.

32. This Order implements the requirements of State Water Resources Control Board Resolution 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*), the Central Valley Water Board's Basin Plans for the Sacramento and San Joaquin River Basin and the Tulare Lake Basin, and other applicable plans and policies of the State Water Resources Control Board (State Water Board) and the Central Valley Water Board as described in the Information Sheet, which is attached to and made part of this Order.

33. This Order prohibits point-source discharges to surface waters unless coverage under an applicable National Pollutant Discharge Elimination System (NPDES) permit (e.g. an industrial storm water permit) has been obtained prior to any surface water discharge. This Order also requires implementation of best practicable treatment or control (BPTC), nutrient management, and a salt minimization plan to minimize potential impacts to groundwater.

34. This Order is consistent with the Sacramento and San Joaquin River and Tulare Lake Basin Plans because it requires compliance with applicable water quality standards and requires the prevention of nuisance. This Order is consistent with State Water Board Resolution 68-16, and requires implementation of BPTC for all wastes and groundwater monitoring and reporting to determine effects on groundwater quality. This Order also requires chemical analysis of manure, digestate (digester solids), process wastewater, and biogas cleaning wastes prior to their use as a fertilizer or soil amendment, to ensure compliance with a certified NMP.

35. Best management practices for protection of the quality of groundwater under land application areas include application of waste at rates which are reasonable for the crop, soil, climate, special local situations, and management system. Reasonable application is considered to be application of wastes at a rate that does not unreasonably degrade and does not pollute the waters of the state, or create a nuisance condition. Reasonable application is achieved by the implementation of an appropriate Nutrient Management Plan (NMP) to maximize harvest and minimize leaching of wastes, and implementation of salt limitations and salt minimization strategies outlined in the Salt Minimization Plan (SMP).

36. The discharge of wastewater from a centralized dairy manure digester/co-digester is regulated by this Order. With appropriate containment of liquid supplemental feedstocks and wastewater, and application of wastewater to land application areas at agronomic rates and in accordance with a certified Nutrient Management Plan and implementation of salt limitations and salt minimization strategies, the discharge of centralized dairy manure digester/co-digester wastewater should not cause exceedance of groundwater quality objectives.

37. This Order regulates the discharge of digestate (digester solids) generated by the centralized dairy manure digester/co-digester operations when used as a fertilizer

or soil amendment on land application areas. Solid wastes generated by a dairy manure digester/co-digester or biogas cleaning operations should not cause an exceedance of groundwater quality objectives provided these materials are appropriately stored and applied to land application areas at agronomic rates in accordance with a certified NMP, and provided salt limitation and minimization strategies are implemented.

38. Some biogas cleaning systems produce an acidic waste. If the pH of the biogas cleaning waste is 2.0 or below, the waste could be classified as hazardous. This Order requires that biogas cleaning waste be chemically tested, and if necessary, disposed off site at an appropriately permitted facility. This Order prohibits the on-site disposal of hazardous waste.

TITLE 27

39. 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.

40. 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).

41. 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).

CALIFORNIA ENVIRONMENTAL QUALITY ACT

42. 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 manure digester projects was prepared by Environmental Services Associates (ESA) for the Central Valley Water Board and was 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 Rancho Cordova and one in Fresno, to receive comments on the IS and NOP.

43. A Technical Advisory Group (TAG) was assembled and met four times to advise staff regarding pertinent environmental issues related to preparation of the EIR. The TAG consisted of representatives from the State Water Resources Control Board, California Air Pollution Control Board, air districts, California Department of Fish and Game, California Energy Commission, California Public Utilities Commission, California Department of Food and Agriculture, CalRecycle, local enforcement agencies, environmental justice organizations, environmental organizations, dairy industry groups, and individuals.

44. On 8 July 2010, the Central Valley Water Board circulated a Dairy Manure Digester and Co-digester Facilities, draft Program Environmental Impact Report (EIR) for public comment. Public comments were received until 23 August 2010, and responses to comments were prepared.

45. In accordance with the California Environmental Quality Act (CEQA), the Central Valley Water Board, acting as the lead agency, adopted Resolution No. R5-2010-0116 on 10 December 2010, which certified the Dairy Manure Digester and Co-digester Facilities, Program EIR.

46. This Order incorporates all mitigation measures for the significant environmental impacts identified in the Dairy Manure Digester and Co-digester Facilities program EIR, except for measures within the jurisdiction of other public agencies. Mitigation measures addressing significant impacts under the jurisdiction of other public agencies can and should be adopted by those agencies as identified in Appendix A of the Program EIR. With respect to impacts 5.6 (cumulative impact on groundwater quality) and 6.6 (cumulative impact on air quality) identified in the EIR, the Central Valley Water Board, on 10 June 2011, made a finding of overriding considerations in accordance with Title14 CCR Section15093. That finding is incorporated by reference into this Order.

ANTIDEGRADATION

47. State Water Resources Control Board Resolution 68-16 requires that a Regional Water Quality Control Board maintain the high quality of waters of the state unless the Board determines that some degradation is consistent with the maximum benefit to the people of the state. The Board must assure than 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 (i.e., exceedance of water quality objectives, or nuisance) will not occur and the highest water quality consistent with the maximum benefit to the people of the State will be maintained.

48. The Federal Antidegradation Policy (section 131.12, Title 40, CFR) applies to discharges to surface waters. The State Water Board has interpreted Resolution No. 68-16 to incorporate the Federal Antidegradation Policy in situations where that policy is applicable. (State Water Board Order No. WQ 86-17).

49. Resolution 68-16 applies only to high quality waters. High quality waters are water bodies with levels of water quality constituents or characteristics that are better than the established water quality objectives. Whether a water is a high quality water is established by constituent or parameter. Waters can be of high quality for some constituents or beneficial uses, but not for others.

50. In the context of this Order, which may potentially regulate discharges to numerous water bodies, each with a number of constituents, there is not sufficient data to fully determine which waters, if any, are not high quality waters. To the extent a discharge under this Order may be to high quality waters, this Order is consistent with Resolution 68-16 as outlined in the findings below.

51. This Order requires that discharges of waste from centralized dairy manure digester/co-digester facilities not cause groundwater to exceed water quality objectives or background quality, whichever is greater, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance. This Order further requires the implementation of BPTC. With regard to surface water discharges, this Order prohibits discharges to surface water from the production area, the discharge of wastewater to surface water from the land application area, the discharge of storm water to surface water from the land application area unless the land application area has been managed consistent with a certified Nutrient Management Plan, and any discharge 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 violates any applicable state or federal policies or regulations.

52. Dischargers subject to this Order must implement BPTC. BPTC measures include, but are not limited to preparation and implementation of a nutrient

management plan, containment system specifications for ponds in which dairy manure digester or co-digester waste will be stored, a salt minimization plan, and a waste management plan. To ensure that implemented practices are protective of water quality, this Order requires testing of co-digester feedstocks, and either groundwater monitoring or membership in an approved Representative Monitoring Program. Based on groundwater monitoring, further waste management improvements may be required. As a result of compliance with this Order, centralized dairy manure digester/co-digester facilities under this Order will minimize their impacts to groundwater.

53. Centralized dairy manure digester/co-digester facilities regulated by this Order will provide both economic and environmental benefits. Construction of centralized dairy manure digesters and co-digesters will enhance local employment, specifically during the construction phase, and will preserve employment on the dairy after construction and during operation. Biogas generated from centralized dairy manure digesters and co-digesters will reduce greenhouse gas emissions from manure emissions, offset fossil fuel use, and divert co-digestion feedstocks from landfills. Biogas created in centralized dairy manure digesters and co-digesters is a source of renewable energy, which can improve the reliability of California's energy supplies. For these and other reasons, any degradation of water quality that may occur as a result of centralized dairy manure digesters and co-digesters regulated under this Order is consistent with maximum benefit to the people of the State.

54. This Order addresses impacts from future discharges of waste, but does not address the cleanup of existing degraded surface and groundwater from past operations. Any required cleanup actions are handled under separate authority under the Water Code.

GENERAL FINDINGS

55. This Order does not authorize violation of any federal, state, or local law or regulation.

56. Pursuant to the CWC Section 13263(g), the discharge of waste into waters of the state is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge of waste. Failure to prevent conditions that create or threaten to create pollution or nuisance or that may unreasonably degrade waters of the State will be sufficient reason to modify, revoke, or enforce this Order, as well as prohibit further discharge.

57. This Order is not a National Pollutant Discharge Elimination System Permit (NPDES) issued pursuant to the Federal Clean Water Act, such as an Industrial Storm Water Permit. Coverage under this Order does not exempt a facility from

the Clean Water Act. Any facility required to obtain such a permit must notify the Central Valley Water Board.

58. The CWC Section13267(b) states that "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including cost, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring these reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports."

59. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2010-0039 are necessary to assure compliance with these waste discharge requirements.

60. This Order does not preempt or supersede the authority of local agencies to prohibit, restrict, or control the use of the dairy and/or the dairy manure digester or co-digester wastes subject to the authorities' control, as allowed under current law. It is the responsibility of the Discharger to make inquiry and to obtain any local governmental agency permits or authorizations prior to the application of dairy manure digester or co-digester waste at each site.

61. The Findings of this Order, supplemental information and details in the attached Information Sheet, and the Central Valley Water Board record on dairy manure digester facilities were considered in establishing the conditions of discharge.

62. The Central Valley Water Board has notified interested agencies and persons of its intent to issue this Order for discharges of wastes from centralized dairy manure digester/co- facilities and has provided them with an opportunity for a public hearing and an opportunity to submit comments.

63. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the proposal to regulate discharges of wastes from centralized dairy manure digester/co-digester facilities under this Order.

64. Any person affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review this action. The State Water Board must receive the petition within 30 days of the date

on which the Central Valley Water Board adopted this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

65. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.

IT IS HEREBY ORDERED that, pursuant to California Water Code Sections 13260, 13263, and 13267 and in order to meet the provisions contained in Division 7 of the California Water Code and regulations and policies adopted hereunder; all Dischargers specified by the Central Valley Water Board and all Dischargers that have submitted the appropriate fee, a completed Facility Information Report (FIR) and a complete NOI, their agents, successors, and assigns shall comply with the following:

A. PROHIBITIONS

1. The discharge of waste, other than as defined in Finding 9 above, or hazardous waste, as defined in Title 22 CCR Section 66261.3, is prohibited.

2. Except when authorized by a National Pollutant Discharge Elimination System Permit (NPDES Permit), the direct or indirect discharge of waste and/or storm water from the production area to surface waters is prohibited[1].

3. The discharge of waste from a centralized dairy manure digester/co-digester facility which causes or contributes to an exceedance of any applicable water quality objective in the appropriate Basin Plans or any applicable state or federal water quality criteria, or a violation of any applicable state or federal policies or regulations is prohibited.

4. The collection, treatment, storage, discharge, or disposal of wastes at centralized dairy manure digester or centralized dairy manure co-digester facilities that results in (1) discharge of waste constituents in a manner which could cause degradation of surface water or groundwater except as allowed by this Order, (2) contamination or pollution of surface water or groundwater, or (3) a condition of nuisance (as defined by the California Water Code Section 13050) is prohibited.

5. The disposal of dead animals in any centralized dairy manure digester/co-digester facility is prohibited.

[1] Discharges of pollutants from the production area to waters of the United States may not lawfully occur except in compliance with an Industrial Storm Water or NPDES permit. Industrial Storm Water or NPEDS permit coverage is not provided by this Order, it must be obtained separately.

6. The application of waste to lands not owned, leased, or controlled by the Discharger and regulated by this Order is prohibited, unless the waste applicator is separately regulated under the Dairy General Order or under this Order.

7. The land application of process wastewater, digestate, or biogas cleaning wastes to land application areas for other than nutrient recycling as specified by a NMP is prohibited.

8. Irrigation supply water that comes into contact or is blended with waste or wastewater shall be considered wastewater and its discharge to surface water from the land application area is prohibited.

9. The application of process wastewater to a land application area before, during, or after a storm event that would result in runoff of the applied water is prohibited.

10. The use of manure or digestate to construct containment structures or to repair, replace, improve, or raise existing containment structures is prohibited.

11. The direct discharge of wastewater into groundwater via backflow through water supply or irrigation supply wells is prohibited.

12. The discharge of dairy or digester process wastewater to surface waters from cropland without an NPDES permit is prohibited.

13. Discharges of storm water to surface water from the land application area where manure, process wastewater or liquid or solid waste produced by a digester has been applied is prohibited unless the land application area has been managed consistent with a Nutrient Management Plan. Discharges of storm water to surface water from the land application area must be sampled in accordance with the requirements of the attached Monitoring and Reporting Program.

14. Bypass or overflow of undigested non-manure digester feedstock onto the land application area is prohibited except when the Discharger has demonstrated to the Executive Officer's satisfaction that such bypass or overflow is caused by an unforeseen digester upset requiring such bypass or overflow, that the discharge of the bypass or overflow to the land application area will not create a threat to water quality or a condition of nuisance, and the Executive Officer has provided written approval of the discharge.

15. 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.

16. Application of solid manure, digestate, or process wastewater to land where crop material is not removed is prohibited (e.g., a pasture that is not mowed and the cuttings removed).

B. GENERAL SPECIFICATIONS

1. The centralized dairy manure digester/co-digester shall have facilities that are designed, constructed, operated, and maintained to retain all wastewater generated during the storage period (maximum period of time anticipated between land application of wastewater), together with all precipitation on and drainage through manured areas and waste storage areas up to and including during a 25-year, 24-hour storm (see Section II. of Attachment E (WMP), which is attached to and made part of this Order).

2. Centralized dairy digester/co-digester facility designs shall ensure that digester and co-digester facilities are protected against 100 year peak stream flows.

3. Wastes and land application areas shall be managed to prevent contamination of crops grown for human consumption.

4. Land application of centralized dairy manure digester or co-digester wastes must be performed subject to the provisions of a site specific NMP and SMP.

5. Any pond to be used as a centralized digester/co-digester or to store imported digester feedstock, digester process wastewater, or digester solids (digestate) or other digester wastes shall be designed and constructed to comply with the groundwater limitations of this Order and General Specification B.6, B.7, B.8, and B.9, prior to use.

6. Pond design must be reviewed and approved by the Executive Officer prior to construction. This Order provides a tiered approach to pond design as defined below:

   a. Tier 1: A 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 will be considered to be consistent with Resolution 68-16.

   b. Tier 2: Any non-Tier 1 pond design that the Discharger demonstrates through submittal of technical reports is protective of groundwater quality as required in General Specification B.7 below.

7. Prior to the enlargement or reconstruction of an existing dairy manure digester/co-digester, settling, storage, or retention pond or the construction of any such new pond, the Discharger shall submit to the Executive Officer:

   a. For a Tier 1 and 2 pond design, a design report prepared by, or under the direct supervision of, and certified by, a Civil Engineer or Certified Engineering Geologist who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work. The design report shall include the following, as specified in the Waste Management Plan (WMP) (Attachment E, attached to and made part of this Order):

      i. Design calculations demonstrating that adequate containment will be achieved,

      ii. Details on the liner and leachate collection and removal system materials (if appropriate),

      iii. A schedule for construction and certification of completion,

      iv. A construction quality assurance plan describing testing and observations needed to document construction of the pond in accordance with the design and Sections 20323 and 20324 of Title 27, and

      v. An operations and maintenance plan for the pond.

   b. For a Tier 2 pond design, the design report shall also include a technical report and groundwater model that demonstrates the proposed pond provides BPTC and is protective of groundwater quality. The Tier 2 pond design must comply with the groundwater limitations in this Order, must include calculations that demonstrate the amount and quality of seepage from the proposed pond and its effect on groundwater quality, and must include a groundwater monitoring plan to evaluate the impact of pond seepage on groundwater quality.

   Enlargement or reconstruction of any existing pond or construction of any new pond shall not begin until the Executive Officer notifies the Discharger in writing that the design report is acceptable.

8. Prior to the placement of waste in any new, enlarged, or reconstructed dairy manure digester/co-digester, settling, storage, or retention pond, the Discharger shall submit a post construction report prepared by, or under the direct supervision of, and certified by, a Civil Engineer or Certified Engineering Geologist who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work. Waste shall not be placed into the pond until the

Executive Officer notifies the Discharger in writing that the post construction report is acceptable. The post construction report shall include: (1) verification that the pond meets the requirements of this Order as specified in General Specification B.7 including documentation of the results of the construction quality assurance testing and observations, (2) certification that the pond was constructed as designed, and (3) as-built diagrams.

9. The level of waste in the centralized dairy manure digester/co-digester wastewater retention ponds shall be kept a minimum of two (2) feet from the top of each aboveground embankment and a minimum of one (1) foot from the ground surface of each below ground pond. Less freeboard may be approved by the Executive Officer when a Civil Engineer or Certified Engineering Geologist who is registered pursuant to California law, or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work, demonstrates that the structural integrity of the pond will be maintained with the proposed freeboard.

10. All ponds shall be managed and maintained to prevent breeding of mosquitoes and other vectors, and be operated in accordance with the following:

    a. Small coves and irregularities shall not be allowed around the perimeter of the water surface;

    b. Weeds shall be minimized through control of water depth, harvesting, or other appropriate method;

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface; and

    d. Management shall be in accordance with the requirements of the Mosquito Abatement District.

11. All precipitation and surface drainage outside of manured areas, feedstock storage areas, or digestate storage areas, including that collected from roofed areas, and runoff from tributary areas up to and including during a 25-year, 24-hour storm event, shall be diverted away from any manured areas, feedstock storage areas and digestate storage areas, unless such drainage is fully retained in a wastewater retention system constructed in accordance with General Specification 5 above.

12. All roofs, buildings, and operational areas located in the production areas of the digester/co-digester operations shall be constructed or otherwise designed so that clean rainwater is diverted away from feedstock and digestate storage areas, unless such drainage is fully contained in the wastewater retention system.

13. The digester feedstock and digestate storage areas shall be designed and maintained to minimize infiltration and convey all water that has contacted animal feed, wastes, digester feedstock, or digester waste to the wastewater retention system within 72 hours after the last rainfall.

14. Unlined ditches, swales, and/or earthen-berm channels may not be used for storage of process wastewater, manure, or tailwater and may only be used for: conveyance of wastewater collected in the digester/co-digester facility area to the retention pond(s); conveyance of wastewater from the retention pond(s) to the land application area; irrigation return water management; or for temporary control of accidental spills or rainfall-induced overflows at the dairy and digester facilities designed, constructed, operated, and maintained in compliance with General Specifications B.1.

15. All materials imported or used for dairy co-digestion must pass through the digester and be capable of aiding or assisting the digestion process.

C. Land Application Area Specifications

1. Land application of all waste (digestate and wastewater) from centralized dairy manure digester or centralized dairy manure co-digester facilities shall be conducted in accordance with a certified Nutrient Management Plan (required in Submittal Schedule [Table 1] below) consistent with the technical standards for nutrient management as specified in Attachment D. The Nutrient Management Plan shall be modified within 90 days if monitoring shows that discharge from the land application fails to comply with the Groundwater Limitations of this Order. The modifications must be designed to bring Dischargers into compliance with this Order.

2. Land application of wastes for nutrient recycling from the centralized digester/co-digester or bio-gas cleanup operations shall not cause the underlying groundwater to contain any waste constituent, degradation product, or any constituent of soil mobilized by the interactions between applied wastes and soil or soil biota, to exceed the groundwater limitations set forth in this Order.

3. Application of all process wastewater, manure, and digestate to the land application area shall be conducted in accordance with a NMP prepared by a specialist who is certified in developing NMPs. A copy of the NMP bearing the signature of the certifier shall be kept at the facility to be available for review at all times by site-operational personnel and Central Valley Water Board inspectors. The NMP shall reflect actual crops grown at the facility, the actual form of nutrients and non-nutrient salts applied to each field, and reasonable application rates. The NMP shall be submitted to the Central Valley Water Board upon request by the Executive Officer.

4. The application of waste to the land application areas shall be at rates that preclude development of vectors or other nuisance.

5. All process wastewater applied to land application areas must infiltrate completely within 72 hours after application.

6. Process wastewater shall not be applied to land application areas during periods when the soil is at or above field moisture capacity unless consistent with a certified Nutrient Management Plan (see Attachment D).

7. Wastes shall not be applied closer than 100 feet to any down gradient surface waters unless: a 35-foot wide vegetated buffer or physical barrier is substituted for the 100-foot setback; or an alternative conservation practice or field-specific condition is demonstrated to provide pollutant reductions equivalent to or better than the reductions achieved by the 100-foot setback.

8. Wastes shall not be applied closer than 100 feet to open tile line intake structures, sinkholes, or agricultural or domestic well heads unless the Discharger has submitted an adequate demonstration that alternative practices will be as protective as the 100-foot separation. Because of its technical nature the demonstration of equivalent protection must be prepared by a California licensed professional engineer or professional geologist with experience in hydrogeology.

9. Annual calculations showing the total nitrogen, phosphorus, potassium, and non-nutrient salts applied to each field, including from sources other than dry waste or wastewater is required. These calculations will be used to annually modify the NMP if revisions are needed to bring the facility into compliance with the Order.

10. Land application areas that receive dry manure, digestate, and process wastewater shall be managed to minimize erosion.

11. Manure, digestate, and process wastewater applied to the land application area shall be at rates reasonable for the crop, soil, climate, special local situations, management system, and type of manure, digestate, and wastewater. In the absence of site specific data, reasonable application for non-nutrient salt shall mean that annual application rates shall not exceed 2,000 pounds per acre for fields that are single-cropped or 3,000 pounds per acre for fields that are multi-cropped. Non-nutrient salts include but are not limited to sodium, calcium, magnesium, carbonate, bicarbonate, chloride, sulfate, and nutrients (nitrogen, phosphorus, and potassium) not used by the crop. If the salt loading limitations are exceeded, the Discharger must submit information demonstrating that the alternative non-nutrient salt loading rates are protective of water quality. Actual application rates for both non-nutrient salts and nutrients in amount actually used by crops are required to be verified annually.

12. Gas scrubber waste and waste generated by the co-digestion process that has the potential to be hazardous waste as defined in Title 22 CCR Section 66261.3, shall be chemically tested to evaluate disposal.

D. Groundwater Limitations

1. Discharge of waste from centralized dairy manure digester/co-digester operations shall not cause the underlying groundwater to exceed water quality objectives or background quality, whichever is greater; to unreasonably affect beneficial uses; or to cause a condition of pollution or nuisance. Water Quality Objectives are specified in the Central Valley Water Board's *Water Quality Control Plan for Sacramento and San Joaquin River,* Fourth Edition, and the *Water Quality Control Plan for the Tulare Lake Basin Plan,* Second Edition.

E. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements General Order No. R5-2011-0039 for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities* (Standard Provisions) dated 10 June 2011, which is attached to and made part of this Order.

2. The Discharger shall comply with all applicable provisions of the California Water Code, Title 27 CCR, and the applicable Water Quality Control Plans.

3. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2011-0039 which is part of this Order, and future revisions thereto or with an individual monitoring and reporting program, as specified by the Central Valley Water Board or the Executive Officer.

4. A discharge of waste that creates or threatens to create a condition of nuisance or pollution, or non-compliance with any part of this Order, is grounds for enforcement and/or revocation of coverage under this Order.

5. The Discharger shall comply with all requirements of this Order and all terms, conditions, and limitations specified by the Executive Officer.

6. The Discharger must maintain coverage under this Order or a subsequent revision to this Order until all feedstock materials, digestate, process wastewater, solid manure, and animal waste impacted soil, including soil within the waste water pond(s)/digester, are disposed of or utilized in a manner which does not pose a threat to surface water or groundwater quality or create a condition of nuisance. At least 90 days before desiring to terminate coverage under this Order, the

Discharger shall submit to the Executive Officer a Notice of Termination (Attachment C) and a closure plan designed to ensure protection of surface water and groundwater. No more than 30 days after completion of site closure, the Discharger shall submit a closure report documenting that all closure activities were completed as proposed and approved in the closure plan. Coverage under this Order will not be terminated until cleanup is complete.

7. A complete NOI form, filing fee, and FIR must be filed by the Discharger for each proposed site covered by this Order. The NOI and FIR forms may be modified by the Executive Officer as the need arises. NOI and FIR forms are attached (Attachment A) to this Order.

8. The Discharger shall submit copies of each NOI and FIR to the appropriate regional office(s) of the Department of Fish and Game, local water district, City Planning Department, County Health Department(s), County Planning Department(s), and County Agricultural Commissioner(s) and the local enforcement agency for CalRecycle, with jurisdiction over the proposed application site(s). Also, the Discharger shall notify adjacent property owners with parcels abutting the subject land application site and, where applicable, tenants. The Discharger shall submit proof to the Executive Officer that all the above agencies and persons were notified.

9. A groundwater monitoring and sampling plan is required as part of the FIR unless the Discharger submits documentation showing that the Discharger has applied to or joined an approved Representative Monitoring Program (RMP) and demonstrated that data from the approved RMP can be substituted for some or all of the groundwater monitoring data that would be collected under the individual groundwater monitoring and sampling plan otherwise required by the FIR. Either approval of the plan by the Executive Officer or acceptance into the approved RMP is required before the Executive Officer issues a Notice of Applicability. For a facility where individual monitoring is required, the ground water monitoring system must be in place within six month of the date the Executive Officer issues the Notice of Applicability, and groundwater must be sampled quarterly for a minimum of two quarters prior to facility operation.

10. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley 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.

11. Technical reports (Monitoring Well Installation and Sampling Plan, Monitoring Well Installation Completion Report, Groundwater Monitoring Report, Waste Management Plan Certification, and portions of the Waste Management Plan) required by this Order must be certified by an appropriately licensed professional as required in this Order and Attachments. If the Executive Officer provides comments on any technical report, the Discharger will be required to address those comments.

12. The Discharger shall maintain a copy of this Order at the site so as to be available at all times to site-operating personnel. The Discharger, landowner and his/her designee shall be familiar with the content of this Order.

13. If the Discharger becomes aware that it failed to submit a relevant fact in a NOI or FIR, or submitted incorrect information in a NOI or in any report to the Central Valley Water Board, it shall promptly submit the correct facts or information.

14. The Discharger must notify the Executive Officer in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new Discharger. The notice must include a new NOI for the proposed Discharger, a NOT for the existing Discharger, and a specific date for the transfer of this Order's responsibility. This notification shall include an acknowledgment that the existing Discharger is liable for compliance with this Order and for all violations up to the transfer date and that the new Discharger is liable for compliance with this Order after the transfer date.

15. If during the performance of Discharger and/or Central Valley Water Board staff inspections, deficiencies, defects, and/or impending failures are observed in any of the wastewater conveyance, control, and/or retention structures, the Discharger shall take immediate action to correct and/or prevent any unauthorized release. The corrective action(s) should be documented and these records attached to the pertinent inspection report or annual report.

16. If the Central Valley Water Board Executive Officer notifies the Discharger that the NMP is not consistent with this Order, revisions shall be made by a specialist who is certified in developing Nutrient Management Plans and submitted to the Central Valley Water Board in writing within 30 days of notification.

F. EFFECTIVE DATE OF COVERAGE UNDER THIS ORDER

1. Coverage under this Order is effective upon receipt of NOA issued by the Executive Officer that this Order applies to the Discharger.

G. PERMIT REOPENING, REVISION, REVOCATION, AND RE-ISSUANCE

1. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary for reasons including, but not limited to:

    a. If more stringent applicable water quality standards are adopted in the Basin Plans, the Central Valley Water Board may revise and modify this Order in accordance with such standards.

    b. To address any changes in state plans, policies, or regulations that would affect the water quality requirements for the discharges and as authorized by state law.

2. The Central Valley Water Board or the Executive Officer may revoke coverage under this Order at any time and require the Discharger to submit a Report of Waste Discharge and obtain individual waste discharge requirements.

H. REQUIRED REPORTS AND NOTICES

1. The Applicant of a centralized dairy manure digester or centralized co-digester project must submit the following in accordance with Table 1: Submittal Schedule K.1:

    a. **Facility Information Report (FIR)** - The Applicant shall submit an FIR for the centralized dairy and digester/co-digester facilities, prepared in accordance with Attachment B. The required elements of a complete FIR are summarized in Table 1, Submittal Schedule K.1, and include:

        i. Monitoring Well Installation and Sampling Plan, as appropriate;
        ii. Nutrient budget and certification that a NMP has been prepared;
        iii. Waste Management plan;
        iv. Salt Minimization Plan[2]; and
        v. Wastewater Retention Pond Design Plan, as appropriate.

    b. **Annual Report** -The Discharger shall submit an Annual Report for the previous year's monitoring, planting and harvesting by 1 August of each year. The Annual Report shall contain those elements required by

[2] The Salt Minimization Plan shall consider the elimination, decommissioning, or the reduction in use of regenerative water softeners on process water distribution networks, or alternatively, evaluate and install alternate technology that reduces or eliminates on-site brine disposal.

Reporting Requirements of MRP R5-2011-0039, or any subsequent revision of the MRP.

c. **Groundwater Reporting** – The Discharger shall submit groundwater monitoring reports by 1 August of each year. Groundwater monitoring reports shall contain those elements required by Reporting Requirements of MRP R5-2011-0039 or any subsequent revision to the MRP.

2. Reporting Provisions:

a. All Reports of Waste Discharge, applications, annual reports, or information submitted to the Central Valley Water Board shall be signed and certified in accordance with C. 7 and C.8 of the Standard Provisions.

b. The Discharger shall submit all reports as specified in the attached Monitoring and Reporting Program No. R5-2011-0039.

c. Any Discharger authorized to discharge waste under this Order shall furnish, within a reasonable time, any information the Central Valley Water Board may request, to determine whether cause exists for modifying, revoking, and reissuing, or terminating their authorization for coverage under this Order. The Discharger shall, upon request, also furnish to the Central Valley Water Board copies of records required to be kept by this Order, including monitoring records required by the MRP.

d. All reports prepared and submitted to the Executive Officer in accordance with the terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board.

J. RECORD-KEEPING REQUIREMENTS

1. The Discharger shall create, maintain for five years, and make available to the Central Valley Water Board upon request by the Executive Officer any reports or records required by this Order including those required under Monitoring and Reporting Program No. R5-2011-0039.

K. SCHEDULE OF TASKS

1. Centralized dairy manure digester or centralized dairy manure co-digester project proponents seeking coverage under this Order are required to submit a complete NOI and FIR for consideration by Central Valley Water Board staff. The elements of the NOI and FIR are included in Table 1: Submittal Schedule. Following receipt of an NOA from the Executive Officer, the Discharger(s) must submit an Annual

Report and a Groundwater Limitations Report in accordance with Table 1: Submittal Schedule.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 10 June 2011.

Original signed by:

_____
PAMELA C. CREEDON, Executive Officer

Order Attachments:

Schedule of Tasks - Table 1
Monitoring and Reporting Program
A. Monitoring Well Installation and Sampling Plan (MWISP)

A. Notice of Intent (NOI)
B. Facilities Information Report (FIR)
C. Notice of Termination (NOT)
D. Nutrient Management Plan (NMP)
E. Waste Management Plan (WMP)
F. Waste Manifest
G. Definitions

Information Sheet
Standard Provisions

Table 1. Submittal Schedule - required reports and notices.

Due Date	Submittal Due	Contents of Submittal	Professional Requirements
Upon Submission of Application for Coverage Under the Order	Notice of Intent	Air Quality Technical Report	Qualified Air Quality Specialist
		Construction Dust Control Plan	Qualified Air Quality Specialist
		Odor Management Plan	Qualified Air Quality Specialist
		Encroachment Permit, if applicable.	As required by local permitting authority
		Biological Site Assessment Report	Qualified Biologist
		Standard “Phase I Type” Electronic Record Search	Qualified Professional
		Visual Assessment Report	Qualified Planner
		Cultural Resources Inventory Report	Qualified Cultural Resources Professional
		Construction Plans	As required by local building department
		Acoustic Report	Qualified Acoustic Specialist

Upon Submission of Application for Coverage Under the Order	Facility Information Report	Monitoring Well Installation and Sampling Plan *45 days after installation and completion of wells, submit a Monitoring Well Installation Completion Report.	California Registered Professional
		Nutrient Management Plan	Certified Nutrient Management Specialist
		Waste Management Plan	California Registered Professional
		Salt Minimization Plan	Certified Nutrient Management Specialist
		Wastewater Retention Pond Design Plan, as appropriate	California Registered Professional
Annually on 1 August	Annual Report	Annual Facility Report as detailed in Reporting Requirements of the MRP.	None
		Groundwater Monitoring Report as detailed in Reporting Requirements of the MRP.	California Registered Professional

ATTACHMENT A

NOTICE OF INTENT

To Comply With the Terms of Waste Discharge Requirements General Order
Order No. R5-2011-0039
For Centralized Dairy Manure Anaerobic Digester or Centralized Dairy
Manure Co-Digester Facilities

Mark Only One Item	1. ☐ New or expanded anaerobic digester or co-digester (Please include a copy of your conditional use permit or CEQA document for the operation of the dairy) 2. ☐ Existing anaerobic digester or co-digester

FACILITY INFORMATION

A. NAME OF BUSINESS OPERATING THE DIGESTER: _____

PHYSICAL ADDRESS OF DIGESTER:

_____
Number and Street City County Zip Code

COUNTY ASSESSOR PARCEL NUMBER(S) FOR DIGESTER FACILITY: _____

_____

CONTACT PERSON: _____ TELEPHONE NO. _____

B. NAME OF LAND OWNER (WHERE THE DIGESTER IS LOCATED):

_____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

C. NAME OF DIGESTER OWNER: _____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

D. ADDRESS WHERE LEGAL NOTICE MAY BE SENT:

_____

Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

E. BILLING ADDRESS:

_____

Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

ASSOCIATED CROPLAND INFORMATION

A. NAME OF BUSINESS FARMING THE ASSOCIATED CROPLAND:

_____

PHYSICAL ADDRESS (OR NEAREST STREET INTERSECTION AND DIRECTION) OF ASSOCIATED CROPLAND:

_____
Number and Street City County Zip Code

COUNTY ASSESSOR PARCEL NUMBER(S) FOR ASSOCIATED CROPLAND:

_____

CONTACT PERSON: _____ TELEPHONE NO. _____

RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

B. NAME OF ASSOCIATED CROPLAND OWNER: _____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

C. ADDRESS WHERE LEGAL NOTICE MAY BE SENT:

_____
Number and Street City County Zip Code

CONTACT PERSON: _____ TELEPHONE NO. _____

CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CO-DIGESTER FACILITY AND ASSOCIATED CROPLAND CEQA COMPLIANCE ASSESSMENT

The following checklist provides a means for the applicant to report on compliance with the mitigation measures identified in the Program Environmental Impact Report (EIR) for Dairy Manure Digester and Co-Digester Facilities (i.e., SCH #20100331085). Alternative documentation may be acceptable provided it demonstrates to staff's satisfaction that it adequately demonstrates compliance with the Final Program EIR's mitigation measures for each covered resource area with potentially significant impacts (e.g., Chapter 6: Air Quality and Greenhouse Gas Emissions). Items checked as "IN PROGRESS" must be accompanied by an explanation.

A. HYDROLOGY AND WATER QUALITY

HAVE YOU COMPLETED A FACILITY INFORMATION REPORT (FIR) IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASTE DISCHARGE REQUIREMENT GENERAL ORDER NO. R5-2011-0039.

_____YES _____NO _____IN PROGRESS

IF YES, DOES YOUR FIR INCLUDE THE FOLLOWING?

1. MONITORING WELL INSTALLATION AND SAMPLING PLAN[i];
2. NUTRIENT BALANCE;
3. WASTE MANAGEMENT PLAN;
4. SALT MINIMIZATION PLAN; AND
5. WASTEWATER RETENTION POND DESIGN PLAN.

_____YES _____NO _____IN PROGRESS

B. AIR QUALITY

1. HAVE YOU COMPLETED AN AIR QUALITY TECHNICAL REPORT[ii]? IF YES, PLEASE ATTACH A COPY OF THE REPORT.

   _____YES _____NO _____IN PROGRESS

   HAS THE AIR QUALITY TECHNICAL REPORT BEEN APPROVED BY THE APPROPRIATE LOCAL AIR DISTRICT? PLEASE ATTACH ALL LOCAL AIR DISTRICT CORRESPONDENCE.

   _____YES _____NO _____IN PROGRESS

2. HAVE YOU REQUIRED THAT CONSTRUCTION CONTRACTORS AND SYSTEM OPERATORS THAT WOULD BE COMPLETING WORK AT YOUR FACILITY IMPLEMENT AIR QUALITY BEST MANAGEMENT PRACTICES[iii]?

   _____YES _____NO _____IN PROGRESS

3. HAVE YOU COMPLETED AN ODOR MANAGEMENT PLAN[iv]? IF YES, PLEASE ATTACH A COPY OF THE REPORT.

   _____YES _____NO _____IN PROGRESS

HAVE YOU SUBMITTED THE ODOR MANAGEMENT PLAN TO THE LOCAL AIR DISTRICT, LOCAL PLANNING DEPARTMENT, AND LOCAL ENFORCEMENT AGENCY (LEA)? ATTACH ALL LOCAL AIR DISTRICT, LOCAL PLANNING DEPARTMENT, AND LOCAL ENFORCEMENT AGENCY CORRESPONDENCE.

_____YES _____NO _____IN PROGRESS

C. LAND USE AND AGRICULTURAL RESOURCES

ARE ANY PROJECT RELATED FACILITIES OFF-SITE OF A DAIRY SITED ON IMPORTANT FARMLAND[v] AS DEFINED BY THE CALIFORNIA DEPARTMENT OF CONSERVATION'S FARMLAND MAPPING AND MONITORING PROGRAM (INCLUDE MAP)?

_____YES _____NO _____IN PROGRESS

IF YES, PROVIDE OVER-RIDING JUSTIFICATION FOR THE CHOICE OF LOCATION.

D. TRANSPORTATION AND TRAFFIC

WILL THE PROJECT INVOLVE THE INSTALLATION OF PIPELINE WITHIN THE EXISTING ROADWAY RIGHT-OF-WAY?

_____YES _____NO _____IN PROGRESS

IF YES, ATTACH A COPY OF THE ROAD ENCROACHMENT PERMIT AND ANY REQUIRED TRAFFIC SAFETY/TRAFFIC MANAGEMENT PLAN(S)[vi] FOR WORK IN THE PUBLIC RIGHT-OF-WAY.

E. BIOLOGICAL RESOURCES

1. HAVE YOU COMPLETED A BIOLOGICAL SITE ASSESSMENT REPORT[vii]? IF YES, PLEASE ATTACH A COPY OF THE REPORT.

   _____YES _____NO _____IN PROGRESS

   HAS THE REPORT BEEN APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)? PLEASE ATTACH ALL CDFG CORRESPONDENCE.

   _____YES _____NO _____IN PROGRESS

2. DOES THE BIOLOGICAL SITE ASSESSMENT DETERMINE THAT SPECIAL-STATUS SPECIES COULD BE AFFECTED BY FACILITIES DEVELOPMENT?

   _____YES _____NO _____IN PROGRESS

   IF YES, HAVE YOU SUBMITTED A PLAN PREPARED BY A QUALIFIED BIOLOGIST, TO MITIGATE OR AVOID ANY SIGNIFICANT IMPACTS ON SPECIAL-STATUS SPECIES TO THE CDFG, THE ENDANGERED SPECIES UNIT OF THE U.S. FISH AND WILDLIFE SERVICE (USFWS) IN SACRAMENTO, AND/OR NATIONAL MARINE FISHERIES SERVICE (NMFS); AS APPROPRIATE.

   _____YES _____NO _____IN PROGRESS

HAS THE PLAN BEEN APPROVED BY CDFG, THE ENDANGERED SPECIES UNIT OF THE USFWS IN SACRAMENTO, AND/OR NMFS? ATTACH ALL CDFG, THE ENDANGERED SPECIES UNIT OF THE USFWS IN SACRAMENTO, AND/OR NMFS CORRESPONDENCE INCLUDING THE PLAN.

_____YES _____NO _____IN PROGRESS

3. DOES THE BIOLOGICAL SITE ASSESSMENT DETERMINE THAT THE PROJECT IS LIKELY TO AFFECT BIOLOGICALLY UNIQUE OR SENSITIVE NATURAL COMMUNITIES?

_____YES _____NO _____IN PROGRESS

IF YES, HAVE YOU SUBMITTED A PLAN PREPARED BY A QUALIFIED BIOLOGIST, TO MITIGATE OR AVOID ANY SIGNIFICANT IMPACTS ON BIOLOGICALLY UNIQUE OR SENSITIVE NATURAL COMMUNITIES TO THE CDFG, THE ENDANGERED SPECIES UNIT OF THE USFWS IN SACRAMENTO, AND/OR NMFS; AS APPROPRIATE.

_____YES _____NO _____IN PROGRESS

HAS THE PLAN BEEN APPROVED BY CDFG, THE ENDANGERED SPECIES UNIT OF THE USFWS IN SACRAMENTO, AND/OR NMFS? ATTACH ALL CDFG, THE ENDANGERED SPECIES UNIT OF THE USFWS IN SACRAMENTO, AND/OR NMFS CORRESPONDENCE INCLUDING THE PLAN.

_____YES _____NO _____IN PROGRESS

4. DOES THE BIOLOGICAL SITE ASSESSMENT DETERMINE THAT THE PROJECT IS LIKELY TO AFFECT WATERS OF THE STATE AND/OR UNITED STATES INCLUDING WETLANDS?

_____YES _____NO _____IN PROGRESS

IF YES, ATTACH A COPY OF THE APPROPRIATE PERMITS[viii] TO ALLOW THE IMPACT TO WATERS OF THE STATE AND/OR UNITED STATES INCLUDING WETLANDS AND ALL CDFG, ARMY CORPS OF ENGINEERS, AND CENTRAL VALLEY WATER BOARD CORRESPONDENCE.

F. HAZARDS AND HAZARDOUS MATERIALS

DOES A STANDARD “PHASE I TYPE” ELECTRONIC RECORD SEARCH IDENTIFY ACTIVE SOIL OR GROUNDWATER CONTAMINATION CASES WITHIN A QUARTER MILE OF DAIRY DIGESTER CONSTRUCTION RELATED EARTH DISTURBING ACTIVITIES? PLEASE ATTACH A COPY OF THE ELECTRONIC RECORD SEARCH.

_____YES _____NO _____IN PROGRESS

IF NO, STANDARD CONSTRUCTION PRACTICES CAN BE IMPLEMENTED. IF YES, ATTACH A PHASE I ENVIRONMENTAL SITE ASSESSMENT[ix] WITH RECOMMENDATIONS FOR APPROPRIATE HANDLING OF ANY CONTAMINATED MATERIALS DURING CONSTRUCTION.

G. AESTHETIC RESOURCES

HAVE YOU COMPLETED A VISUAL ASSESSMENT REPORT[x]? IF YES, PLEASE ATTACH A COPY OF THE REPORT.

_____YES _____NO _____IN PROGRESS

HAVE YOU SUBMITTED THE VISUAL ASSESSMENT REPORT TO THE LOCAL PLANNING AND BUILDING DEPARTMENTS? ATTACH ALL PLANNING AND BUILDING DEPARTMENT CORRESPONDENCE.

_____YES _____NO _____IN PROGRESS

H. CULTURAL RESOURCES

1. HAVE YOU COMPLETED A CULTURAL RESOURCES INVENTORY REPORT[xi]? IF YES, PLEASE ATTACH A COPY OF THE REPORT.

   _____YES _____NO _____IN PROGRESS

   DOES THE CULTURAL RESOURCES INVENTORY REPORT INDICATE IF CONSTRUCTION RELATED IMPACTS TO CULTURAL RESOURCES ARE POTENTIALLY SIGNIFICANT?

   _____YES _____NO _____IN PROGRESS

   IF YES, A CULTURAL RESOURCES MITIGATION PLAN NEEDS TO BE INCLUDED WITH THE INVENTORY REPORT.

2. HAVE YOU REQUIRED THAT CONSTRUCTION CONTRACTORS AND SYSTEM OPERATORS PERFORMING GROUND-DISTURBING ACTIVITIES AT YOUR FACILITY IMPLEMENT INADVERTENT DISCOVERY MEASURES[xii] FOR CULTURAL RESOURCES INCLUDING HUMAN REMAINS?

   _____YES _____NO _____IN PROGRESS

I. GEOLOGY

HAVE YOU PREPARED CONSTRUCTION PLANS FOR THE PROJECT DETAILING COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATION REGARDING BUILDING CODE REQUIREMENTS? IF YES, PLEASE ATTACH A COPY OF THE PLANS.

_____YES _____NO _____IN PROGRESS

HAVE THE CONSTRUCTION PLANS BEEN APPROVED BY THE APPROPRIATE LOCAL BUILDING DEPARTMENT? PLEASE ATTACH ALL LOCAL BUILDING DEPARTMENT CORRESPONDENCE.

_____YES _____NO _____IN PROGRESS

J. NOISE

HAVE YOU PREPARED AN ACOUSTIC REPORT[xiii] THAT ADDRESSES CONSTRUCTION AND OPERATIONAL NOISE LEVELS? IF YES, PLEASE ATTACH A COPY OF THE PLAN.

_____YES _____NO _____IN PROGRESS

HAVE YOU SUBMITTED THE ACOUSTIC REPORT TO THE LOCAL PLANNING AND BUILDING DEPARTMENTS? ATTACH ALL PLANNING AND BUILDING DEPARTMENT CORRESPONDENCE.

_____YES _____NO _____IN PROGRESS

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[i] Please note that within 45 days after completion of any monitoring well, the Discharger shall submit to the Executive Officer a Monitoring Well Installation Completion Report (MWICR) as detailed in Attachment A of Monitoring and Reporting Program R5-2010-0130. Additionally, as specified by Provision E.14 of the Order, groundwater must be sampled quarterly for a minimum of two quarters prior to the initiation of discharge at a new dairy and /or dairy digester/co-digester facility.

[ii] An Air Quality Technical Report should be prepared by a qualified air quality specialist. The report should include an analysis of potential air quality impacts (including a screening level analysis to determine if construction and operation related criteria air pollutant emissions would exceed applicable air district thresholds, as well as any health risk associated with TACs from all dairy digester or co-digester facility sources) and reduction measures as necessary associated with digester developments through the environmental review process. Preparation of the technical report should be coordinated with the appropriate air district and should identify compliance with all applicable New Source Review and Best Available Control Technology (BACT) requirements. The technical report should identify all project emissions from permitted (stationary) and non-permitted (mobile and area) sources and mitigation measures (as appropriate) designed to reduce significant emissions to below the applicable air district thresholds of significance, and if these thresholds cannot be met with mitigation, then the individual digester project could require additional CEQA review or additional mitigation measures.

[iii] Applicants should require construction contractors and system operators to implement the following Best Management Practices (BMPs) as applicable during construction and operations:

- Facilities shall be required to comply with the rules and regulations from the applicable AQMD or APCD. For example, development of dairy digester and co-digester facilities in the SJVAPCD jurisdiction should comply with the applicable requirements of Regulation VIII (Fugitive PM10 Prohibitions) and Rule 9510 (Indirect Source Review).
- Use equipment meeting, at a minimum, Tier II emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, §2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Comply with state regulations to minimize truck idling.
- Maintain all equipment in proper working condition according to manufacturer's specifications.
- Use electric equipment when possible.
- Payment into an AQMD or APCD operated Voluntary Emission Reduction Agreement (VERA).

- Incorporate fuel cells where feasible as an alternative to internal combustion engines, which generate NOx emissions, to generate energy from the biogas produced at dairy digester and co-digester facilities.
- Where feasible as an alternative to internal combustion engines, which generate NOx emissions, use biogas from dairy manure digester and co-digester projects as a transportation fuel (compressed biomethane) or inject biomethane into the utility gas pipeline system.

[iv] An Odor Management Plan (OMP) should be prepared by a qualified air quality specialist. The report should include information on compliance with appropriate local land use plans, policies, and regulations, including applicable setbacks and buffer areas from sensitive land uses for potentially odoriferous processes. The Odor Management Plan shall also specifically address odor control associated with digester operations and should include:

- A list of potential odor sources.
- Identification and description of the most likely sources of odor.
- Identification of potential, intensity, and frequency of odor from likely sources.
- A list of odor control technologies and management practices that could be implemented to minimize odor releases. These management practices shall include the establishment of the following criteria as appropriate:
  - Establish time limit for on-site retention of undigested odiferous co-substrates (i.e., organic co-substrates must be put into the digester within 48 hours of receipt).
  - Provide negative pressure buildings for indoor unloading of odiferous co-digestion substrates. Treat collected foul air in a biofilter or air scrubbing system.
  - Establish contingency plans for operating downtime (e.g., equipment malfunction, power outage).
  - Manage delivery schedule to facilitate prompt handling of odorous co-substrates.
  - Modification options for land application practices if land application of digestate results in unacceptable odor levels.
  - Protocol for monitoring and recording odor events.

[v] Whenever feasible, project related facilities off-site of a dairy should not be sited on Important Farmland as defined by the California Department of Conservation's Farmland Mapping and Monitoring Program.

[vi] When required by the road encroachment permit process, the contractor(s) will submit a traffic safety / traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. Elements of the plan will likely include, but are not necessarily limited to, the following:

- Develop circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone.
- To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours.
- Limit lane closures during peak traffic hours to the extent possible. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress.
- Limit, where possible, the pipeline construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone.
- Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. Use flaggers and/or signage to safely direct traffic through construction work zones.

- Coordinate with facility owners or administrators of sensitive land uses such as police and fire stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities.
- To the maximum extent feasible, maintain access to private driveways located within construction zones.
- Coordinate with the local public transit providers so that bus routes or bus stops in work zones can be temporarily relocated as the service provider deems necessary.

[vii] The Biological Site Assessment Report shall be prepared by a qualified wildlife biologist. It shall:

- Evaluate the project site's potential to support special-status plant and wildlife species (including critical habitat) and whether special-status species could be affected by dairy digester and co-digester development, including construction and operations.
- Determine if the project is likely to affect biologically unique or sensitive natural communities.
- Determine if the project is likely to affect waters of the State and/or U.S., including wetlands.

[viii] This could include obtaining a Clean Water Act Section 404 permit, Section 401 Water Quality Certification or Waiver, a Section 1602 Streambed Alteration Agreement, and any other applicable permits.

[ix] A Phase I Environmental Site Assessment (ESA) shall be prepared by a Registered Environmental Assessor (REA) or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site; specifically in the area proposed for construction of dairy digester or co-digester facilities. The Phase I ESA shall include a review of appropriate federal and State hazardous materials databases, as well as relevant local hazardous material site databases for hazardous waste on-site and off-site locations within a one quarter mile radius of the project site. This Phase I ESA shall also include a review of existing or past land uses and areal photographs, summary of results of reconnaissance site visit(s), and review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater.

- If no contaminated soil or groundwater is identified or if the Phase I ESA does not recommend any further investigation then the project applicant or agency(s) responsible shall proceed with final project design and construction.
- If existing soil or groundwater contamination is identified and if the Phase 1 ESA recommends further review, the applicant or agency(s) responsible shall retain a REA to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations prior to any earth disturbing activities. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.

[x] The Visual Assessment Report should be prepared by a qualified planner. It should:

- Provide information indicating project compliance with the siting of centralized facilities such that they don't conflict with local policies for preservation of vistas or scenic views.
- Determine the need for site specific mitigations to minimize potentially sensitive views of both digester facilities at dairies or off dairies at centralized facilities considering the scale of the facilities, the site specific topography, site specific landscape design, including berms and/or tree rows, should be constructed in order to minimize potentially sensitive views.

- Provide design information for centralized facilities such that they are similar in massing and scale to other nearby agricultural buildings in agricultural areas, in order to retain the character of the surrounding landscape.
- Provide information indicating project compliance with the implementation of the following construction mitigation measures: 1) Main construction staging areas and the storage of large equipment should be situated on individual sites in such a manner to minimize visibility to nearby receptors. As feasible, staging areas and storage should occur away from heavily traveled designated scenic roadways, in areas where it will be least visible from the surrounding roads; 2) Construction staging areas should be onsite and remain clear of all trash, weeds and debris, etc. Construction staging areas should be located in areas that limit visibility from scenic roadways and sensitive receptors to the extent feasible.
- Determine the need for site specific mitigations with regard to flares. Whenever possible, flares should be situated on individual sites in such a manner to minimize visibility to nearby receptors. Site specific design should discourage placement of flares at higher elevations, or within the line of site of nearby residential buildings or scenic highways. In the event that site design does not provide adequate coverage, an enclosed flare design should be used or landscaping, such as berms or tree rows, should be constructed to minimize light impacts.

[xi]Prior to ground-disturbing activities, a Cultural Resources Inventory Report shall be prepared by one or more appropriately qualified cultural resources professionals. It shall:

- Contain a record search at the appropriate information center of the California Historical Resources Information System (CHRIS) to determine whether the project area has been previously surveyed and whether cultural resources were identified; and the results of a sacred lands search from the Native American Heritage Commission (NAHC).
- Recommend whether a surface survey is warranted to satisfy the requirements of CEQA based on the sensitivity of the project area for cultural resource in the event the CHRIS records search indicates that no previous survey has been conducted.
    - If, for example, the existing dairy or agricultural land proposed for establishment of a digester or co-digester facility was constructed entirely on fill, as shown by original and final contour drawings, a surface survey for archaeological resources would not be warranted. Similarly, a surface survey may not be warranted if the project area has been extensively disturbed by dairy or agricultural use.
- Assess the significance of the resources according to applicable federal, state, and local significance criteria if the survey, CHRIS record search, or NAHC search indicate cultural resources are located within a project area.
- Propose treatment measures for cultural resources determined significant historical resources to ameliorate any “substantial adverse change” in the significance of each historical resource, in consultation with a qualified archaeologist or architectural historian, and other concerned parties.
    - Treatment measures may include preservation through avoidance or project redesign, incorporation within open space or conservation easements, data recovery excavation of archaeological resources, formal documentation of built environment resources, public interpretation of the resource, or other appropriate treatment.
- Evaluate the integrity and significance of built environmental resources now 50 years of age unless the building(s) or structures(s) were covered in an existing survey and determined not significant according to applicable federal, state, and local criteria.

[xii]Inadvertent discovery measures for cultural resources include procedures for discovery and protection of cultural resources, including human remains, during construction or earth-disturbing activities.

Within project areas of identified archaeological sensitivity, discovery measures would include: (1) a worker education course for all construction personnel; (2) monitoring of all earth-disturbing activities

by a qualified archeologist; and (3) procedures for discovery of cultural resources, including human remains, during construction or ground-disturbing activities if an archaeological monitor is not present. Monitoring by a Native American with knowledge in cultural resources may also be required, as appropriate. Monitoring within recent fill deposits or non-native soil would not be required.

All construction or ground-disturbing activities shall be halted within 100 feet of a cultural resources discovery, including human remains, whether or not a monitor is present, until a qualified professional archaeologist can evaluate the find. If the find is determined to be a significant historical resource and cannot be avoided, then impacts on that resource will require mitigation. During evaluation or mitigative treatment, ground disturbance and construction work could continue on other parts of the project area. If known or suspected human remains are discovered, in addition to halting all construction or ground-disturbing activities within 100 feet, the following steps must be taken before construction activities may be resumed within the stop-work area:

- Immediately notify the County Coroner, and
- If the remains are of Native American origin, the following steps must be taken:
  - The applicant has 24 hours to notify the NAHC, who should, in turn, notify the person identified as the proper descendant of any human remains. Under existing law, the descendant then has 24 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery.
  - If the NAHC is unable to identify a descendant or if the descendant does not make recommendations within 24 hours, the applicant shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance.
  - Should the applicant not accept the descendant's recommendations, the applicant or the descendant may, under existing law, request mediation by the NAHC.

If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, all ground disturbing activities within 50 feet of the find shall be halted until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate salvage measures in consultation with the lead agency and in conformance with Society of Vertebrate Paleontology.

[xiii] The Acoustic Report should be prepared by a qualified acoustic specialist. It should:

- Providing information indicating project compliance with the implementation of the following construction mitigation measures: 1) Construction contractors should comply with all local noise ordinances and regulations; 2) Construction activities should be limited to daytime hours, between 7 a.m. and 6 p.m., Monday through Saturday, or an alternative schedule established by the local jurisdiction; 3) Construction equipment noise should be minimized by muffling and shielding intakes and exhaust on construction equipment to a level no less effective than the manufacture's specifications, and by shrouding or shielding impact tools; and, 4) Construction contractors within 750 feet of sensitive receptors should locate fixed construction equipment, such as compressors and generators, and construction staging areas as far as possible from nearby sensitive receptors.

- Determine the need for site specific mitigations with regard to continuous equipment operation at night. Any continuous equipment operating at night within 1,000 feet of a sensitive receptor must be enclosed. Furthermore, an acoustic study and follow-up measurements must be performed (after construction) to prove that the noise from any continuous equipment operating at night would comply with all local noise regulations. If no local regulations are available, noise levels must be below 45 dBA at the nearest sensitive receptor. If the sound level exceeds local regulations, or 45 dBA if applicable, additional sound-proofing should be installed to meet the required sound level.

ATTACHMENT B

Facility Information Report
For
Centralized Dairy Manure Anaerobic Digester
or Centralized Dairy Manure Co-Digester Facilities

To obtain coverage under Waste Discharge Requirements General Order No. R5-2011-0039 (Order) the applicant must submit a complete Facility Information Report (FIR). The purpose of the FIR is to provide the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff with site-specific information that is needed to determine if the individual facility can be regulated under the Order.

The FIR must contain, at a minimum, all the elements listed in the sections below. The portions of the FIR that are related to facility and design specifications must be prepared by, or under the responsible charge of, and certified by a civil engineer or engineering geologist who is registered pursuant to California Law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

A. FACILITY SITING

1. Topographic map that identifies the property boundary, all existing nearby (within 2,000 feet) domestic, irrigation, and municipal supply wells and groundwater monitoring wells, surface water bodies, drainage courses and their tributaries/destinations, and other major physical and man-made features, as appropriate.

2. Section, township, and range in which the centralized digester or co-digester facility and land application areas are located.

3. The County Assessor parcel number(s) for the centralized digester/co-digester production areas.

4. The County Assessor parcel number(s) for each land application area (where process wastewater, and/or digestate/soil amendment is applied under control of the owner or operator and whether it is owned, rented, or leased).

5. Identify whether the facility is within a 100-year floodplain (for co-digester facilities this includes all land application areas where process wastewater, digestate/soil amendment would be applied). If the facility is located with a 100-year floodplain, an engineering report showing if the facility has adequate

flood protection needs to be completed and included as an attachment to the FIR.

6. A description of the current land use within one mile of the perimeter of the facility.

B. HYDROGEOLOGY

1. Provide the anticipated depth to first encountered groundwater for the facility and land application areas;

2. A site map (with an aerial photograph as the base map) that identifies the location of all domestic, irrigation, and municipal supply wells and groundwater monitoring wells. Specify which wells are associated with the facility and land application areas;

3. A copy of the well completion report and/or boring log for each well associated with the facility and land application areas, as available;

4. A copy of all laboratory analysis reports for all groundwater sampling events that have been conducted at the facility and land application areas; and

5. Include a copy of the Monitoring Well Installation and Sampling Plan (MWISP) as required by the Monitoring and Reporting Program R5-2011-0039 (MRP) as an attachment to the FIR. Within 45 days after the installation and completion of wells, submit a Monitoring Well Installation Completion Report as detailed in Attachment A of the MRP.

C. FACILITY DESCRIPTION

1. A Site Map (or Maps) of appropriate scale to show property boundaries and the following in sufficient detail:

   (a) The location of the features of the production area including:

      1) Structures used for digester/co-digester operation (ponds or tanks used for storage or digestion, feedstock storage, digestate storage, soil amendment storage), drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, or digester supply wells) and groundwater monitoring wells; and

      2) Digester/co-digester process wastewater conveyance structures, discharge points, and mixing points with irrigation water supplies for land application

areas; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

D. LAND APPLICATION AREA DESCRIPTION

1. A map that identifies the location and features of all land application areas, and whether it is owned, rented, or leased, to which solid manure, process wastewater, soil amendment, and/or digestate from the dairy digester/co-digester facility is or may be applied for nutrient recycling including:

   (a) Provide a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication what type of waste is applied (solid manure, process wastewater, soil amendment and/or digestate); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field; and

   (b) Process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

2. Include a nutrient budget and a certification statement that a Nutrient Management Plan (NMP) has been prepared as required by Required Reports and Notices H.1.a.ii of the Centralized Digester General Order as an attachment to the FIR.

E. ANAEROBIC DIGESTER DESCRIPTION/OPERATION

1. Provide design information and a schematic showing how the anaerobic digester would be operated within the facility's waste management system. The schematic must identify all digester equipment and apparatuses (including, but not limited to, all piping, pumps, storage tanks, feedstock storage areas, and process wastewater and digestate storage).

2. For facilities proposing co-digestion (including facilities that will only accept additional dairy manure), identify the anticipated feedstocks that may be

3. If the facility will import liquid and/or semi solid feedstocks, describe how these wastes would be stored until such a time that they are incorporated into the digestion process.

F. WASTE MANAGEMENT PLAN

1. Include a Waste Management Plan (WMP) as required by Required Reports and Notices H.1.a.iii of the Order as an attachment to the FIR.

G. SALT MINIMIZATION PLAN

1. Include a Salt Minimization Plan (SMP) as required by Required Reports and Notices H.1.a.iv of the Order as an attachment to the FIR.

ATTACHMENT C

NOTICE OF TERMINATION

To Comply With the Terms of Waste Discharge Requirements General Order
Order No. R5-2011-0039
For Centralized Dairy Manure Anaerobic Digester or Centralized Dairy
Manure Co-Digester Facilities

FACILITY INFORMATION

A. NAME OF BUSINESS OPERATING THE DIGESTER: _____

PHYSICAL ADDRESS OF DIGESTER:

_____
Number and Street City County Zip Code

COUNTY ASSESSOR PARCEL NUMBER(S) FOR DIGESTER FACILITY: _____

_____

CONTACT PERSON: _____ TELEPHONE NO. _____

B. NAME OF LAND OWNER (WHERE THE DIGESTER IS LOCATED):

_____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

C. NAME OF DIGESTER OWNER: _____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

D. ADDRESS WHERE LEGAL NOTICE MAY BE SENT:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

E. BILLING ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

ASSOCIATED CROPLAND INFORMATION

A. NAME OF BUSINESS FARMING THE ASSOCIATED CROPLAND:

_____

PHYSICAL ADDRESS (OR NEAREST STREET INTERSECTION AND DIRECTION) OF ASSOCIATED CROPLAND:

_____
Number and Street City County Zip Code

COUNTY ASSESSOR PARCEL NUMBER(S) FOR ASSOCIATED CROPLAND:

_____

CONTACT PERSON: _____ TELEPHONE NO. _____

RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

B. NAME OF ASSOCIATED CROPLAND OWNER: _____

ADDRESS:

_____
Number and Street City County Zip Code

TELEPHONE NO. _____ RECEIVE CORRESPONDENCE: [ ] YES [ ] NO

C. ADDRESS WHERE LEGAL NOTICE MAY BE SENT:

_____
Number and Street City County Zip Code

CONTACT PERSON: _____ TELEPHONE NO. _____

CLOSURE

Attached to this Notice of Termination, include a Closure Work Plan that outlines the steps to be taken to clean up the facility, based on the planned post-closure use of the facility. The closure plan needs to include a time schedule for completion of closure activities. After approval of the Closure Work Plan by the Executive Officer, you may proceed with closure activities.

When the closure activities have been completed, submit a Final Closure Report detailing the closure activities. Following approval of the Final Closure Report by the Executive Officer, your coverage under Waste Discharge Requirements General Order No. R5-2011-0039 will be terminated.

Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment." In addition, I certify that the provisions of the permit, including the criteria for eligibility, will be complied with.

DIGESTER OWNER

Signature of Digester Owner	Title
Printed or Typed Name	Date

DIGESTER OPERATOR

Signature of Digester Operator	Title
Printed or Typed Name	Date

LAND OWNER (WHERE THE DIGESTER IS LOCATED)

Signature of Land Owner	Title
Printed or Typed Name	Date

ASSOCIATED CROPLAND OWNER

Signature of Land Owner	Title
Printed or Typed Name	Date

ATTACHMENT D

Contents of a Nutrient Management Plan
and
Technical Standards for Nutrient Management
for
Centralized Dairy Manure Anaerobic Digester
or Centralized Dairy Manure Co-Digester Facilities

Owners and operators of centralized dairy anaerobic digesters or co-digesters (Dischargers) seeking coverage under Waste Discharge Requirements General Order No. R5-2011-0039 (Order) who have received a Notice of Applicability for the Order shall ensure that digestate, gas scrubber waste, and/or process wastewater is applied to land for nutrient recycling per the requirements specified by a site specific Nutrient Management Plan (NMP). The purpose of the NMP is to budget and manage the nutrients applied to the land application area(s) considering all sources of nutrients, crop requirements, soil types, climate, and local conditions in order to prevent adverse impacts to surface water and groundwater quality. The NMP must take the site-specific conditions into consideration in identifying steps that will minimize nutrient movement through surface runoff or leaching past the root zone.

The NMP must contain, at a minimum, all of the elements listed below under Contents of a Nutrient Management Plan and must be in conformance with the applicable Technical Standards for Nutrient Management (Technical Standards), also listed below. Note that the NMP must be updated in response to changing conditions, monitoring results, and other factors.

A specialist who is certified in developing nutrient management plans shall develop the NMP. A certified specialist is a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy or a Technical Service Provider certified in nutrient management in California by the Natural Resources Conservation Service (NRCS). The Executive Officer may approve alternative proposed specialists. Only NMPs prepared and signed by these parties will be considered certified.

The NMP is linked to other sections of the Order and accompanying Monitoring and Reporting Program (MRP). The MRP specifies minimum amounts of monitoring that must be conducted at the centralized dairy manure digester or co-digester facilities. As indicated below, this information must be used to make management decisions related to nutrient management. Likewise, the timing and amounts of process wastewater applications to crops must be known to correctly calculate the amount of storage needed in holding ponds.

Wastes and land application areas must be managed to prevent contamination of crops grown for human consumption.

Contents of a Nutrient Management Plan

Facility Assessment

The NMP shall identify the name and address of the owners of land upon which the centralized dairy manure anaerobic digester or co-digester facility (Facility) is located, the owners and/operators of the centralized dairy manure digester or co-digester, and the owners and operators of land application areas to which digester wastes are applied, as reported in the Notice of Intent (NOI), and shall contain all of the following elements to demonstrate that the Discharger can control nutrient losses that may impact surface water or groundwater quality and comply with the requirements of the Order and the Technical Standards.

I. Land Application Area Information

A. Identify each land application area, whether it is owned, rented, or leased, to which manure, digestate, soil amendment, or process wastewater from the digester or co-digester production area is or may be applied for nutrient recycling) on a single published base map (topographic map or aerial photo) at an appropriate scale which includes:

1. A field identification system (Assessor's Parcel Number; land application area by name or number; total acreage of each land application area; crops grown; indication if each land application area is owned, rented, or leased by the Discharger; indication what type of waste is applied (solid manure, digestate, or soil amendment only, wastewater only, or both); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field; and

2. Process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

B. Provide the following information for land application area identified in I.A above:

1. Field's common name (name used when keeping records of waste applications).

2. Assessor's Parcel Number.

3. Total acreage.

4. Crops grown and crop rotation.

5. Information on who owns and/or leases the field.

6. Proposed sampling locations for discharges of storm water and tailwater to surface water.

C. Identify each field under the control of the Discharger and within five miles of the dairy where neither process wastewater nor manure is applied. Each field shall be identified on a single published base map at an appropriate scale by the following:

1. Assessor's Parcel Number.

2. Total acreage.

3. Information on who owns, leases, or rents the field.

Note: The NMP must be updated and the Central Valley Water Board notified in writing before waste is applied to the lands identified in Section C above.

II. Sampling and Analysis (see Technical Standard I below)

Identify the sampling methods, sampling frequency, and analyses to be conducted for soil, manure, digestate, soil amendment, process wastewater, irrigation water, and plant tissue analysis (Technical Standard I below).

III. Nutrient Budget (see Technical Standard V below)

The Discharger shall develop a nutrient budget for each land application area. The nutrient budget shall establish planned rates of nutrient applications for each crop based on soil test results, manure and process wastewater analyses, irrigation water analyses, crop nutrient requirements and patterns, seasonal and climatic conditions, the use and timing of irrigation water, and the nutrient application restrictions listed in Technical Standards V.A through V.D below. The Nutrient Budget shall include the following:

A. The rate of application of manure, digestate, soil amendment, and process wastewater for each crop in each land application area (also considering other sources of nutrients) to meet each crop's needs without exceeding the application rates specified in Technical Standard V.B below. The basis for the application rates must be provided.

B. The timing of applications for each crop in each land application area and the basis for the timing (Technical Standard V.C below). The maximum period of time anticipated between land application events (storage period) based on proper timing and compliance with Technical Standard V.C. below. This will be used to determine the storage capacity needs.

C. The method of manure, digestate, soil amendment, and process wastewater application for each crop in each land application area (Technical Standard V.D below).

D. If phosphorus and/or potassium applications exceed the amount of these elements removed from the land application area in the harvested portion of the crop, the soil and crop tissue analyses shall be reviewed by an agronomist at least every five years. If this review determines that the buildup of phosphorus or potassium threatens to reduce the long-term productivity of the soil or the yield, quality or use of the crops grown, application rates will be adjusted downward to prevent or correct the problem.

IV. Setbacks, Buffers, and Other Alternatives to Protect Surface Water (see Technical Standard VII below)

A. Identify all potential surface waters or conduits to surface water that are within 100 feet of any land application area.

B. For each land application area that is within 100 feet of a surface water or a conduit to surface water, identify the setback, vegetated buffer, or other alternative practice that will be implemented to protect surface water (Technical Standard VII below).

V. Field Risk Assessment (see Technical Standard VIII below)

Evaluate the effectiveness of management practices used to control the discharge of waste constituents from land application areas by assessing the water quality monitoring results of discharges of manure, process wastewater, tailwater, subsurface (tile) drainage, or storm water from the land application areas.

VI. Record-Keeping (see Technical Standard IX below)

Identify the records that will be maintained for each land application area identified in I.A above.

VII. Nutrient Management Plan Review (see Technical Standard X below)

A. Identify the schedule for review and revisions to the NMP.

B. Identify the person who will conduct the NMP review and revisions.

Technical Standards for Nutrient Management

The Discharger shall comply with the following Technical Standards for Nutrient Management in the development and implementation of the Nutrient Management Plan (NMP).

I. Sampling and Analysis

Soil, manure, digestate, soil amendment, process wastewater, irrigation water, and plant tissue shall be monitored, sampled, and analyzed as required in Monitoring and Reporting Program No. R5-2011-0039, and any future revisions thereto. The results of these analyses shall be used during the development and implementation of the NMP.

II. Crop Requirements

A. Realistic yield goals for each crop in each land application area shall be established. For new crops or varieties, industry yield recommendations may be used until documented yield information is available.

B. Initially, each crop's nutrient requirements for nitrogen, phosphorus, and potassium may be determined based on recommendations from the University of California or *Western Fertilizer Handbook* (9th Edition). Once laboratory values are available, nutrient requirements shall be determined based on historical crop nutrient removal determined from laboratory values.

III. Available Nutrients

A. All sources of nutrients (nitrogen, phosphorus, and potassium) available for each crop in each land application area shall be identified prior to land applications. Potential nutrient sources include, but are not limited to, manure, digestate, soil amendments, process wastewater, irrigation water, commercial fertilizers, and previous crops.

B. Nutrient values of soil, manure, digestate, soil amendments, process wastewater, and irrigation water shall be determined based on laboratory analysis. "Book values" for manure and process wastewater may be used for planning of waste applications during the first two years during initial development of the NMP if necessary. Acceptable book values are those values recognized by 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 the material. The nutrient content of commercial fertilizers shall be derived from California Department of Food and Agriculture published values.

C. Nutrient credit from previous legume crops shall be determined by methods acceptable to the University of California Cooperative Extension, the NRCS, or a specialist certified in developing nutrient management plans.

IV. Overall Nutrient Balance

If the NMP shows that the nutrients generated by the dairy and anaerobic digester or co-digesters exceed the amount needed for crop production in the land application area, the Discharger must implement management practices that will prevent impacts to surface water or groundwater quality due to excess nutrients.

V. Nutrient Budget

The NMP shall include a nutrient budget which includes planned rates of nutrient applications for each crop that do not exceed the crop's requirements for total nitrogen considering the stage of crop growth and that also considers all nutrient sources, climatic conditions, the irrigation schedule, and the application limitations in A through D below.

A. General Standards for Nutrient Applications

1. Prohibition A.6 of the Order: "*The application of waste to lands not owned, leased, or controlled by the Discharger and regulated by this Order.*"

2. Land Application Area Specification C.4 of the Order: "*The application of waste to the land application areas shall be at rates that preclude development of vectors or other nuisance*."

3. Land Application Specification C.5 of the Order: *"All process wastewater applied to land application areas must infiltrate completely within 72 hours after application."*

4. Plans for nutrient management shall specify the form, source, amount, timing, and method of application of nutrients on each land

application area to minimize nitrogen and/or phosphorus movement to surface and/or ground waters to the extent necessary to meet the provisions of the Order.

5. Where crop material is not removed from the land application area, waste applications are not allowed. For example, if a pasture is not grazed or mowed (and cuttings removed from the land application area), waste shall not be applied to the pasture.

6. Manure and/or process wastewater will be applied to the land application area for use by the first crop covered by the NMP only to the extent that soil tests indicate a need for nitrogen application.

7. Supplementary commercial fertilizer(s) and/or soil amendments may be added when the application of nutrients contained in manure, digestate, soil amendment, and/or process wastewater alone is not sufficient to meet the crop needs, as long as these applications do not exceed provisions of the Order.

8. Nutrient applications to a crop shall not be made prior to the harvest of the previous crop except where the reason for such applications is provided in the NMP.

9. Water applications shall not exceed the amount needed for efficient crop production.

10. Nutrients shall be applied in such a manner as not to degrade the soil's structure, chemical properties, or biological condition.

B. Nutrient Application Rates

1. General

a. Planned rates of nutrient application shall be determined based on soil test results, crop tissue test results, nutrient credits, manure and process wastewater analysis, crop requirements and growth stage, seasonal and climatic conditions, and use and timing of irrigation water. Actual applications of nitrogen to any crop shall be limited to the amounts specified below.

b. Nutrient application rates shall not attempt to approach a site's maximum ability to contain one or more nutrients through soil adsorption. Excess applications or applications that cause soil imbalances should be avoided.

2. Nitrogen

   a. Total nitrogen applications to a land application area prior to and during the growing of a crop will be based on pre-plant or pre-side dress soil analysis to establish residual nitrogen remaining in the field from the previous crop to establish early season nitrogen applications. Pre-plant or side dress nitrogen applications will not exceed the estimated total crop use as established by the nutrient management plan. Except as allowed below, application rates shall not result in total nitrogen applied to the land application areas exceeding 1.4 times the nitrogen that will be removed from the field in the harvested portion of the crop. Additional applications of nitrogen are allowable if the following conditions are met:

      i. Plant tissue testing has been conducted and it indicates that additional nitrogen is required to obtain a crop yield typical for the soils and other local conditions;

      ii. The amount of additional nitrogen applied is based on the plant tissue testing and is consistent with University of California Cooperative Extension written guidelines or written recommendations from a professional agronomist;

      iii. The form, timing, and method of application facilitates timely nitrogen availability to the crop; and

      iv. Records are maintained documenting the need for additional applications.

   b. If application of total nitrogen to a land application area exceeds 1.4 times total nitrogen removed from the land application area through the harvest and removal of the previous crop, the Discharger shall either revise the NMP to immediately prevent such exceedance or submit a report demonstrating that the application rates have not and will not pollute surface or ground water.

3. Phosphorus and Potassium

   a. Phosphorus and potassium may be applied in excess of crop uptake rates. If, however, monitoring indicates that levels of these elements are causing adverse impacts, corrective

Important Note:
Use of animal manure as a primary source of nitrogen commonly results in applications of phosphorus and potassium at rates that exceed crop needs. Over time, these elements build up in the soils and can cause adverse impacts. For example, phosphorus will leave the land application area in surface runoff and contribute to excessive algae growth in receiving waters and potassium can build up in crops to the point of limiting their use as animal feed. Application of these nutrients at agronomic levels, along with reasonable erosion control and runoff control measures, will normally prevent such problems.

Nutrients are being evaluated in several Central Valley surface waters. Where these studies show that nutrients are adversely impacting beneficial uses, the Central Valley Water Board will work with parties in the watershed, including dairies, to reduce discharges of phosphorus, nitrogen and possibly other constituents.

C. Nutrient Application Timing

1. Process wastewater application is not the same as irrigation. Process wastewater application scheduling should be based on the nutrient needs of the crop, the daily water use of the crop, the water holding capacity of the soil, and the lower limit of soil moisture for each crop and soil.

2. Wastewater shall not be applied when soils are saturated. During the rainy season rainfall can exceed crop water demand. However, the application of wastewater is allowable if tests show that there is an agronomic need and current conditions indicate that threat of nitrate leaching is minimal.

3. 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.

4. Nutrient applications for spring-seeded crops shall be timed to avoid surface runoff and leaching by winter rainfall.

D. Nutrient Application Methods

1. The Discharger shall apply nutrient materials uniformly to application areas or as prescribed by precision agricultural techniques.

2. Land Application Area Specification C.10 of the Order: "*Land application areas that receive dry manure, digestate, and process wastewater shall be managed to minimize erosion.*"

VI. Wastewater Management on Land Application Areas

Control of water and process wastewater applications and runoff is a part of proper nutrient management since water transports nutrients, salts, and other constituents from cropland to groundwater and surface water. The Discharger shall comply with the following provisions of the Order, which place requirements on applications of manure and process wastewater to, and runoff from, cropland:

A. Prohibition A.3 of the Order: "*The discharge of waste from a centralized dairy manure digester/ co-digester facility which causes or contributes to an exceedance of any applicable water quality objective in the appropriate Basin Plans or any applicable state or federal water quality criteria, or a violation of any applicable state or federal policies or regulations is prohibited*."

B. Prohibition A.4 of the Order: "The collection, treatment, storage, discharge, or disposal of wastes at centralized dairy manure digester or centralized dairy manure co-digester facilities that results in (1) discharge of waste constituents in a manner which could cause degradation of surface water or groundwater except as allowed by this Order, (2) contamination or pollution of surface water or groundwater, or (3) a condition of nuisance (as defined by the California Water Code Section 13050) is prohibited. "

C. Prohibition A.12 of the Order: "The discharge of dairy or digester process wastewater to surface waters from cropland without an NPDES permit is prohibited."

D. Prohibition A.13 of the Order: "Discharges of storm water to surface water from the land application area where manure, process wastewater or liquid or solid waste produced by a digester has been applied is prohibited unless the land application area has been managed consistent with a Nutrient Management Plan. Discharges of

storm water to surface water from the land application area must be sampled in accordance with the requirements of the attached Monitoring and Reporting Program.

E. Land Application Area Specification C.2 of the Order: "Land application of wastes for nutrient recycling from the centralized digester/co-digester or bio-gas cleanup operations shall not cause the underlying groundwater to contain any waste constituent, degradation product, or any constituent of soil mobilized by the interactions between applied wastes and soil or soil biota, to exceed the groundwater limitations set forth in this Order."

F. Land Application Area Specification C.4 of the Order: **"***The application of waste to the land application areas shall be at rates that preclude development of vectors or other nuisance.*"

G. Land Application Area Specification C.5 of the Order: "*All process wastewater applied to land application areas must infiltrate completely within 72 hours after application.*"

H. Land Application Area Specification C.3 of the Order: "*Application of all process wastewater, manure, and digestate to the land application area shall be conducted in accordance with a NMP prepared by a specialist who is certified in developing NMPs. A copy of the NMP bearing the signature of the certifier shall be kept at the facility to be available for review at all times by site-operational personnel and Central Valley Water Board inspectors. The NMP shall reflect actual crops grown at the facility, the actual form of nutrients and non-nutrient salts applied to each field, and reasonable application rates. The NMP shall be submitted to the Central Valley Water Board upon request by the Executive Officer."*

I. Land Application Area Specification C.9 of the Order: "*Annual calculations showing the total nitrogen, phosphorus, potassium, and non-nutrient salts applied to each field, including from sources other than dry waste or wastewater is required. These calculations will be used to annually modify the NMP if revisions are needed to bring the facility into compliance with the Order."*

VII. Setbacks and Vegetated Buffer

A. Land Application Area Specification C.8 of the Order: "*Wastes shall not be applied closer than 100 feet to open tile line intake structures, sinkholes, or agricultural or domestic well heads unless the Discharger*

has submitted an adequate demonstration that alternative practices will be as protective as the 100-foot separation. Because of its technical nature the demonstration of equivalent protection must be prepared by a California licensed professional engineer or professional geologist with experience in hydrogeology."

B. A setback is a specified distance from surface waters or potential conduits to surface waters where manure and process wastewater may not be land applied, but where crops may continue to be grown.

C. A vegetated buffer is a narrow, permanent strip of dense perennial vegetation where no crops are grown and which is established parallel to the contours of and perpendicular to the dominant slope of the land application area for the purposes of slowing water runoff, enhancing water infiltration, trapping pollutants bound to sediment, and minimizing the risk of any potential nutrients or pollutants from leaving the land application area and reaching surface waters.

D. The minimum widths of setbacks must be doubled around the wellhead of a drinking water supply well constructed in a sole-source aquifer.

E. Practices and management activities for vegetated buffers include the following:

1. Removal of vegetation in vegetated buffers will be in accordance with site production limitations, rate of plant growth, and the physiological needs of the plants.

2. Do not mow below the recommended height for the plant species.

3. Maintain adequate ground cover and plant density to maintain or improve filtering capacity of the vegetation.

4. Maintain adequate ground cover, litter, and canopy to maintain or improve infiltration and soil condition.

5. Periodic rest from mechanical harvesting may be needed to maintain or restore the desired plant community following episodic events such as drought.

6. When weeds are a significant problem, implement pest management to protect the desired plant communities.

7. Prevent channels from forming.

VIII. Field Risk Assessment

The results of the water quality monitoring of discharges of manure, digestate, soil amendments, process wastewater, storm water, and tailwater to surface water from each land application area, as required by Monitoring and Reporting Program No. R5-2011-0039, shall be used by the Discharger to assess the movement of nitrogen and phosphorus from each land application area.

IX. Record-Keeping

The Discharger shall maintain records for each land application area as required in the Record-Keeping Requirements of Monitoring and Reporting Program No. R5-2011-0039.

X. Nutrient Management Plan Review

A. Provide the name and contact information (including address and phone number) of the person who created the NMP; the date that the NMP was drafted; the name, title, and contact information of the person who approved the final NMP; and the date of NMP implementation.

B. The NMP shall be updated when discharges from any land application area exceed water quality objectives, a nutrient source has changed, site-specific information has become available to replace defaults values used in the overall nutrient balance or the nutrient budget, nitrogen application rates in any land application area exceed the rates specified in Technical Standard V.B or management practices are not effective in minimizing discharges.

C. The NMP shall be updated prior to any anticipated changes that would affect the overall nutrient balance or the nutrient budget such as, but not limited to, a crop rotation change, changes in the available cropland, or the changes in the volume of process wastewater generated.

D. The Discharger shall review the NMP at least once every five years and notify the Central Valley Water Board in the annual report of any proposed changes that would affect the NMP.

ATTACHMENT E

Waste Management Plan
For
Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-Digester Facilities

A Waste Management Plan (WMP) for the digester/co-digester production areas, including any digester waste handling and storage facilities sited on participating dairies or other facilities, is required by Waste Discharge Requirements General Order No. R5-2011-0039. The WMP must be submitted with the Notice of Intent (NOI) and Facility Information Report (FIR) and it shall address all of the items below. The portions of the WMP that are related to facility and design specifications (items II and III) must be prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

The purpose of the WMP is to ensure that the production area of the dairy and digester facilities are designed, constructed, operated and maintained so that wastes generated by the facilities are managed in compliance with Waste Discharge Requirements General Order No. R5-2011-0039 in order to prevent adverse impacts to groundwater and surface water quality.

I. A description of the facility that includes:

   A. The name of the facility and the county in which it is located;

   B. The address, Assessor's Parcel Number, and Township, Range, Section(s), and Baseline Meridian of the property;

   C. The name(s), address(es), and telephone number(s) of the property owner(s), facility operator(s), and the contact person for the facility;

   D. Total volume (gallons) of process wastewater to be generated daily and how this volume was determined; and

II. An engineering report demonstrating that the existing facilities have adequate containment capacity. The report shall include calculations documenting that the containment structures are able to retain all process wastewater generated, together with all precipitation on and drainage through manured or waste/feedstock storage areas, up to and including during a 25-year, 24-hour storm.

A. The determination of the necessary storage volume shall reflect:

1. The maximum period of time, as defined in the Nutrient Management Plan (Item III.B of Attachment D), anticipated between land application events (storage period), which shall consider application of process wastewater, manure, or digestate/soil amendment to the land application area as allowed by Waste Discharge Requirements Order No. R5-2011-0039 using proper timing and rate of applications;

2. Manure, digestate/soil amendment, process wastewater, and other wastes accumulated during the storage period;

3. Normal precipitation, or normal precipitation times a factor of one and a half, less evaporation on the surface area during the entire storage period. If normal precipitation is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in II.C below;

4. Normal runoff (runoff from normal precipitation), or runoff due to normal precipitation times a factor of one and a half, from the production area during the storage period. If normal runoff is used in the calculation of necessary storage volume, the Waste Management Plan shall include a Contingency Plan as specified in II.C below;

5. The average pan evaporation during the months of minimum and maximum evaporation. Pan evaporation shall be determined from the nearest weather station to the facility. Provide the name, location (latitude and longitude) of the weather station used;

6. 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility;

7. 25-year, 24-hour runoff from the facility's drainage area;

8. Residual solids after liquids have been removed; and

9. Necessary freeboard (one foot of freeboard for belowground retention ponds and two feet of freeboard for aboveground retention ponds).

B. If the facility's storage capacities are inadequate, the WMP shall include proposed modifications or improvements in accordance with General Specification B.8, B.9, and B.10. Any proposed modifications or improvements must be: prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or

other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work; and include:

1. Design calculations demonstrating that adequate containment will be achieved;

2. Details on the liner and leachate collection and removal system (if appropriate) materials;

3. A schedule for construction and certification of completion to comply with the General Specification B. 9 and B.10. of Waste Discharge Requirements General Order No. R5-2011-0039;

4. A construction quality assurance plan describing testing and observations need to document construction of the pond in accordance with the design and Sections 20323 and 20324 of Title 27; and

5. An operation and maintenance plan for the pond.

C. Contingency Plan: If the necessary storage volume calculated in II.A or II.B above is based on normal precipitation and/or runoff rather than precipitation or runoff from normal precipitation times a factor of one and a half (see II.A.3 and II.A.4 above), then the engineering report shall include a Contingency Plan that includes a plan on how the excess precipitation and/or runoff that is generated during higher than normal precipitation will be managed.

III. An engineering report demonstrating that the facilities have adequate flood protection. If the Discharger can provide to the Executive Officer an appropriate published flood zone map that shows the facilities are outside the relevant flood zone, an engineering report showing adequate flood protection is not required for that facility. The engineering report shall include a map and cross-sections to scale, calculations, and specifications as necessary. The engineering report shall also describe the size, elevation, and location of all facilities present to protect the facility from inundation or washout from the 100-year peak stream flows.

IV. A report assessing the design and construction of the manure, digestate, soil amendment, and feedstock storage, areas.

A. The report shall assess whether the following design and construction criteria are met:

1. Facilities are designed and constructed to collect and divert all process wastewater to a retention pond;

2. The facility is designed and constructed to divert all water that has contacted digester and co-digester feedstock to the retention pond; and

3. Manure, digestate, soil amendment, feedstock storage, and feed storage areas are designed and constructed to collect and divert runoff and leachate from these areas to the retention pond.

B. If the facility does not meet the above design and construction criteria, the WMP shall include proposed modifications or improvements to achieve the criteria and a schedule for construction and certification of completion.

V. An operation and maintenance plan to ensure that:

A. All precipitation and surface drainage from outside digester feedstock, waste storage areas, including that collected from roofed areas, is diverted away from manured areas, unless such drainage is fully contained and is included in the storage requirement calculations required in item II, above;

B. All ponds are managed to maintain the required freeboard and to prevent odors, breeding of mosquitoes, damage from burrowing animals, damage from equipment during removal of solids, embankment settlement, erosion, seepage, excess weeds, algae, and vegetation;

C. Holding ponds provide necessary storage volume prior to winter storms (by November 1st at the latest), maintain capacity considering buildup of solids, and comply with the minimum freeboard required in Waste Discharge Requirements General Order No. R5-2011-0039;

D. There is no discharge of waste or storm water to surface waters from the production area or the waste application area(s);

E. Procedures have been established for removal of solids from any lined pond/digester to prevent damage to the pond liner;

F. The Digester/co-digester area (feedstock storage, digestate/soil amendment drying and storage area) are maintained to collect and divert all water that has contacted animal wastes, feedstocks, or digestate/soil amendment to the retention pond and to minimize the infiltration of water into the underlying soils;

G. Digester and Co-digester feedstock and digestate storage areas are maintained to ensure that runoff and leachate from these areas are collected and diverted to the retention pond and to minimize infiltration of leachate from these areas to the underlying soils; and

H. Chemicals and other contaminants handled at the facilities (dairy and digester/co-digester) are not disposed of in any digester or co-digester process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants;

VI. Documentation from a trained professional (i.e., a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training) that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or nearby surface waters.

ATTACHMENT F

Definitions
For
Centralized Dairy Manure Anaerobic Digester
or Centralized Dairy Manure Co-Digester Facilities

1.	*25-year, 24-hour rainfall event*	A precipitation event with a probable recurrence interval of once in twenty five years with a duration of twenty four hours, as defined by the National Weather Service in Technical Paper No. 40, "Rainfall Frequency Atlas of the United States," May, 1961, or equivalent regional or State rainfall probability information developed from this source.
2.	*Agronomic rates*	The land application of irrigation water and nutrients (which may include animal manure, bedding, digester solids (digestate) waste feed or codigester feedstocks, or process wastewater) at rates of application in accordance with a plan for nutrient management that will enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth.
3.	*Anaerobic digester*	A device for optimizing the anaerobic digestion of biomass and/or animal manure, often used to recover biogas for energy production. Commercial digester types include complete mix, continuous flow (horizontal or vertical plug-flow, multiple-tank, and single tank) and covered lagoon.
4.	*Anaerobic digestion*	A naturally occurring biological process in which organic material is broken down by bacteria in a low-oxygen environment resulting in the generation of methane gas and carbon dioxide as its two primary products.
5.	*Aquifer*	Ground water that occurs in a saturated geologic unit that contains sufficient permeability and thickness to yield significant quantities of water to wells or springs.
6.	*Biofuel*	Technically, any biomass derived substance used for energy (heat, power, or motive). The term 'biofuel' usually is used to describe liquid transportation fuels derived from biomass.

7.	*Biogas*	A naturally occurring gas formed as a by-product of the breakdown of organic waste materials in a low-oxygen (e.g., anaerobic) environment. Biogas is composed primarily of methane (typically 55% – 70% by volume) and carbon dioxide (typically 30% – 45%). Biogas may also include smaller amounts of hydrogen sulfide (typically 50 – 2000 parts per million [ppm]), water vapor (saturated), oxygen, and various trace hydrocarbons. Due to its lower methane content (and therefore lower heating value) compared to natural gas, biogas use is generally limited to engine-generator sets and boilers adapted to combust biogas as fuel. Biogas includes landfill gas, digester gas (from wastewater treatment plants) and biogas from the decomposition of animal waste or food processing waste. As used by this Order, the word biogas usually refers to biogas created by the anaerobic digestion of animal manure and co-digestion materials.
8.	*Biomass*	Biomass is any organic matter that is available on a renewable or recurring basis, including agricultural crops and trees, wood and wood wastes and residues, plants (including aquatic plants), grasses, residues, fibers, and animal wastes, municipal wastes, and other waste materials.
9.	*Central Valley Water Board*	The California Regional Water Quality Control Board, Central Valley Region.
10.	*Centralized Dairy Manure Digester*	An anaerobic digester or co-digester not situated on a milk cow dairy and that receives manure and/or dairy process wastewater for use as feedstock.
11.	*Certified Nutrient Management Plan*	A nutrient management plan that is prepared and signed by a specialist who is certified in developing nutrient management plans. A certified specialist is: a Professional Soil Scientist, Professional Agronomist, Professional Crop Scientist, or Crop Advisor certified by the American Society of Agronomy; a Technical Service Provider certified in nutrient management in California by the Natural Resources Conservation Service; or other specialist approved by the Executive Officer.
12.	*Co-digestion*	Co-digestion is the simultaneous digestion of a mixture of manure and one or more feedstocks to increase the production of biogas. The expression co-digestion is applied independently to the ratio of the respective substrates.
13.	*Co-digester*	An anaerobic digester located at a dairy that uses imported feedstocks in the co-digestion process.

14.	*Confined animal facility*	Is defined in Title 27 CCR Section 20164 as "*… any place where cattle, calves, sheep, swine, horses, mules, goats, fowl, or other domestic animals are corralled, penned, tethered, or otherwise enclosed or held and where feeding is by means other than grazing*."
15.	*Confined area*	The area where cows are confined within the production area.
16.	*Cropland*	The land application area where dry or solid manure and/or process wastewater is recycled for the purpose of beneficially using the nutrient value of the manure and/or process wastewater for crop production.
17.	*Degradation*	Any measurable adverse change in water quality.
18.	*Digestate*	Any solid or semi-solid residual of the dairy digestion or co-digestion process that has not been confirmed through chemical analysis to meet the criteria required to be defined as a soil amendment.
19.	*Discharge*	The discharge or release of waste to land, surface water, or ground water.
20.	*Discharger*	The owner of real property where a dairy with a dairy digester or dairy co-digester is located; the owner and/or operator of a dairy with a dairy digester or dairy co-digester; and the owner and/or operator of the dairy digester or co-digester at a dairy facility subject to Waste Discharge Requirements General Order No. R5-2010-0130.
21.	*Expansion*	Any increase in the existing herd size (i.e., by more than the mature dairy cows in the herd as authorized by the local permitting authority, and/or as documented in the NOI).
22.	*Facility*	The property identified as such in Waste Discharge Requirements General Order No. R5-2010-0130. It includes the dairy production area, the digester production area, and land application area controlled by the Discharger.
23.	*Feedstock*	The principal input for the digestion or co-digestion process (e.g., manure).
24.	*Field moisture capacity*	The upper limit of storable water in the soil once free drainage has occurred after irrigation or precipitation.
25.	*Freeboard*	The elevation difference between the process wastewater (liquid) level in a pond and the lowest point of the pond embankment before it can overflow.

26.	*Incorporation into soil*	The complete infiltration of process wastewater into the soil, the disking or rotary tiller mixing of manure into the soil, shank injection of slurries into soil, or other equally effective methods.
27.	*Irrigation return flow*	Surface and subsurface water that leaves a field following application of irrigation water.
28.	*Land application area*	Land under control of the owner or operator of a centralized dairy digester, or a centralized dairy co-digester, whether it is owned, rented, or leased, to which manure, or digestate as a soil amendment, or process wastewater from the production area is or may be applied for nutrient recycling.
29.	*Manure*	The fecal and urinary excretion of livestock and other commingled materials. Manure may include bedding, compost, and waste feed.
30.	*Manured solids*	Manure that has a sufficient solids content such that it will stack with little or no seepage.
31.	*Mature dairy cow*	A dairy cow that has produced milk at any time during her life.
32.	*Mesophilic*	Conditions in a biological reactor where temperatures are around 95° F (35° C).
33.	*Methane*	Methane is the main component of natural gas and biogas. It is a natural hydrocarbon consisting of one carbon atom and four hydrogen atoms (CH_4). The heat content of methane is approximately 1,000 Btu/scf (standard cubic feet). Methane is a greenhouse gas with 21 times the global warming potential of carbon dioxide on a weight basis.
34.	*Methanogenic*	Methane-forming; In the anaerobic digestion process, methanogenic bacteria consume the hydrogen and acetate (from the hydrolysis and the acid forming stages) to produce methane and carbon dioxide
35.	*Normal precipitation*	The long-term average precipitation based on monthly averages over the time that data has been collected at a particular weather station. Normal precipitation is usually taken from data averaged over a 30-year period (e.g. 1971 to 2000) if such data is available.
36.	*Non-nutrient salt*	Include but are not limited to sodium, calcium, magnesium, carbonate, bicarbonate, chloride, sulfate, and unused nutrient salts.

37.	*Nuisance*	Is defined in the Porter-Cologne Water Quality Control Act as "…anything which meets all of the following requirements: a-Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. *b-Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. c-Occur during, or as a result of, the treatment or disposal of wastes*."
38.	*Nutrient*	Any element taken in by a plant which is essential to its growth and which is used by the plant in elaboration of its food and tissue.
39.	*Nutrient recycling*	The application of nutrients at agronomic rates for crop production.
40.	*Off-property discharge*	The discharge or release of waste beyond the boundaries of the property of the dairy's production area or the land application area or to water bodies that run through the production area or land application area.
41.	*Order*	The general waste discharge requirements order for discharges of dairy digester or co-digester waste from centralized anaerobic digester or co-digester facilities.
42.	*Overflow*	The intentional or unintentional diversion of flow from the collection, treatment, land application, and conveyance systems, including pumping facilities.
43.	*Pollutant*	Is defined in Title 40 Code of Federal Regulations Section 122.2 as "…dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water."
44.	*Pollution*	Is defined in Section 13050(l)(1) of the Porter-Cologne Water Quality Control Act as *"…an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses."*

45.	*Pond*	Retention ponds, storage ponds, settling ponds, or any structures used for the treatment, storage, disposal, and recycling of process wastewater. Ponds are differentiated from sumps, which are structures in a conveyance system used for the installation and operation of a pump.
46.	*Process wastewater*	Water directly or indirectly used in the operation of a dairy and dairy digester or co-digester for any or all of the following: spillage or overflow from animal watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other dairy facilities; washing or spray cooling of animals; or dust control…and includes any water or precipitation and precipitation runoff which comes into contact with any raw materials, products, or byproducts including manure, feed, milk, or bedding.
47.	*Production area*	That part of a dairy or a dairy manure digester or co-digester that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The production area includes, but is not limited to, barns, corrals, flushed or scraped corrals, feed-lanes, milking parlor, feed storage area, waste management components such as solids separators, digesters, wastewater retention ponds, stormwater retention ponds, and pumps and piping.
48.	*Rainy season*	The period of time when rainfall can exceed crop water demand.
49.	*Regional Board*	One of the nine California Regional Water Quality Control Boards.
50.	*Salt*	The products, other than water, of the reaction of an acid with a base. Salts commonly break up into cations (sodium, calcium, etc.) and anions (chloride, sulfate, etc.) when dissolved in water. Total dissolved solids is generally measured as an indication of the amount of salts in a water or wastewater.
51.	*Salt in animal rations*	The sodium chloride and any added minerals (such as calcium, phosphorus, potassium, sulfur, iron, selenium, copper, zinc, or manganese) in the animal ration.
52.	*Scrubbing*	Cleaning emission gases from a chemical reactor, generally with sprays of solutions that will absorb gases.
53.	*Significant storm event*	A precipitation event that results in continuous runoff of storm water for a minimum of one hour, or intermittent discharge of runoff for a minimum of three hours in a 12-hour period.

54.	*Sole-source aquifer*	An aquifer that supplies 50 percent or more of the drinking water of an area.
55.	*State*	The State of California.
56.	*State Water Board*	The State Water Resources Control Board.
57.	*Storm water*	Storm water runoff, snowmelt runoff, and surface runoff and drainage.
58.	*Subsurface (tile) drainage*	Water generated by installing and operating drainage systems to lower the water table below irrigated lands. Subsurface drainage systems, deep open drainage ditches, or drainage wells can generate this drainage.
59.	*Surface water*	Water that includes essentially all surface waters such as navigable waters and their tributaries, interstate waters and their tributaries, intrastate waters, all wetlands and all impoundments of these waters. Surface waters include irrigation and flood control channels.
60.	*Tailwater*	The runoff of irrigation water from an irrigated field.
61.	*Thermophilic*	Conditions in a biological reactor where temperatures are around 130° F (55° C) or higher.
62.	*Total Solids*	Used to characterize digester systems input feedstock. Total solids (TS) means the dry matter content, usually expressed as % of total weight, of the prepared feedstock. By definition, TS = 100% – moisture content % of a sample. Also, TS = VS plus ash content.
63.	*Waste*	Is defined as set forth in Water Code Section 13050(d) and includes, but is not limited to, manure, leachate, digester solids (solids produced by the digestion process), gas scrubber waste (produced during the cleaning of the biogas), dairy, dairy 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 soil amendments.
64.	*Waters of the State*	Defined in Section 13050 of the California Water Code as "*…any surface water or groundwater, including saline waters, within the boundaries of the state*."
65.	*Wet Season*	Is defined as the period of time between 1 October to 30 April of each year

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2011-0039
GENERAL ORDER
FOR
CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code (CWC) Section 13267. The Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

This MRP includes Monitoring, Record-Keeping, and Reporting requirements. Monitoring requirements include monitoring of discharges of process wastewater, co-digester feedstocks, storm water, and tailwater from the production area and land application areas, digestate (digester solids produced by the digestion process); gas scrubber waste (produced during the cleaning of the biogas), 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 that 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 the facility and associated waste disposal areas to ensure the facility is 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. Note that some types of events require that a report be submitted to the Central Valley Water Board within 24 hours (see section C).

Dischargers must follow sampling and analytical procedures approved by the Executive Officer. Approved procedures will be posted on the Central Valley Water Board's web site and copies may be obtained by contacting staff. 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.

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

A. MONITORING REQUIREMENTS

1. Feedstocks

a. Centralized dairy manure digesters that use manure/wastewater from a dairy operating under Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2007-0035 (Dairy General Order) and the dairy accepts back a like mass of digester wastes for disposal.

(1). Chemical analysis must be performed for manure/wastewater received from a dairy operating under Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2007-0035 (Dairy General Order) that is receiving back digester wastes for disposal (Table 1.a).

(2). Calculation of the mass must be performed for each of the constituents in Table 1.a that are imported from a Dairy General Order dairy which will receive back digester wastes for disposal.

Table 1.a DIGESTER FEEDSTOCK
<u>Once every three months</u> Laboratory analyses for total nitrogen, total phosphorus, total potassium, and total fixed solids of wastewater and manure received from each dairy operating under the Dairy General Order. <u>Once a month</u> Calculate mass of total nitrogen, total phosphorus, total potassium, and total fixed solids received from each dairy operating under the Dairy General Order.

b. Centralized Dairy Manure Co-digesters

(1). Co-digestion feedstock material must be non-hazardous and have been chemically analyzed prior to delivery on-site (as specified in Table 1.b below). Manifests for all imported feedstock material must be retained on site for potential Central Valley Water Board staff review (see Section B – Record-keeping Requirements).

(2). The requirement to chemically analyze each feedstock prior to importation to the co-digester facility may be reduced or eliminated if it can be demonstrated that the sampling performed was sufficient to evaluate changes/variability in the character and volume of feedstocks used. Any proposed reduction in monitoring requirements must be approved by the Executive Officer in writing prior to implementation.

Table 1.b. CO-DIGESTER FEEDSTOCK
Prior to Importation Laboratory analyses for pH, electrical conductivity (or total dissolved solids), percent moisture, total nitrogen, total phosphorus, total potassium, chloride, calcium, sodium, sulfate, and EPA 503 metals (arsenic, cadmium, chromium, copper, nickel, lead, selenium, zinc, and mercury).

2. Visual Inspections

The Discharger shall conduct and record the inspections specified in Table 3 below and maintain records of the results on-site for a period of five years.

Table 2. INSPECTIONS
Production Area Weekly during the wet season (1 October to 30 April) and monthly between 1 May and 30 September: Inspect all waste storage areas and note any conditions or changes that could result in discharges to surface water and/or from property under control of the Discharger. For digesters or co-digesters using pond systems, note whether freeboard within each liquid 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). During and after each significant storm event[1]: Visual inspections of storm water containment structures for discharge, freeboard, berm integrity, cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Monthly on the 1st day of each month: For digesters or co-digesters using pond systems, photograph each pond showing the height of wastewater relative to the depth marker and the current freeboard on that date. All photos shall be dated and maintained as part of the discharger's record.
Digester/Co-digester 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 process 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 buffers or alternative conservation practices.

[1] A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

3. Waste and Nutrient Monitoring

The Discharger shall monitor process wastewater and digestate/gas cleaning waste for the constituents and at the frequency as specified in Table 3 below. Dischargers shall also monitor plant tissue produced at the facility, soil in each land application area, and irrigation water used on land application area(s) for the constituents and at the frequency as specified in Table 3 below. This information is for use in conducting nutrient management on digester/co-digester controlled

land application areas. It must be used to develop and implement a Nutrient Management Plan. The Discharger is encouraged to collect and use additional data, as necessary, to refine nutrient management.

Table 3. WASTE AND NUTRIENT MONITORING
Process Wastewater Each application Record the volume (gallons or acre-inches) and date of process wastewater application to each land application area. Quarterly during one application event Field measurement of electrical conductivity. Laboratory analyses for nitrate-nitrogen (only when retention pond is aerated), un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, total potassium, and total dissolved solids. Once every two years (biennially) Laboratory analyses for general minerals (calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride). Quarterly for one year and annually thereafter Laboratory analyses of liquid digestate, prior to blending in a dairy wastewater pond or blending with irrigation water for pH, total dissolved solids, electrical conductivity, nitrate-nitrogen, ammonium-nitrogen, total Kjeldahl nitrogen, boron, total phosphorus, total potassium, bicarbonate, carbonate, chloride, calcium, magnesium, sodium, sulfate, and EPA 503 metals (arsenic, cadmium, chromium, copper, nickel, lead, selenium, zinc, and mercury).
Digestate *For Centralized Dairy Manure Digesters and Co-digesters:* Annually: Record the total dry weight (tons) of digestate applied annually to each land application area and the total dry weight (tons) of digestate exported offsite. *For Centralized Dairy Manure Digesters:* Once every two years (biennially) Laboratory analyses for general minerals (calcium, magnesium, sodium, sulfur, chloride) and fixed solids (ash). Twice per year Laboratory analyses for total nitrogen, total phosphorus, total potassium, and percent moisture.

Table 3 (continued) WASTE AND NUTRIENT MONITORING
For a Centralized Dairy Manure Co-digester: Annually: Laboratory analyses for pH, fixed solids (ash), total nitrogen, total phosphorus, total potassium, chloride, calcium, sodium, sulfur, and EPA 503 metals (arsenic, cadmium, chromium, copper, nickel, lead, selenium, zinc, and mercury).
Plant Tissue At harvest: Record the percent moisture and total weight (tons) of harvested material removed from each land application area. Laboratory analyses for total nitrogen, total phosphorus, total potassium (expressed on a dry weight basis), fixed solids (ash), and percent moisture. The following test is only required if the Discharger wants to add fertilizer in excess of 1.4 times the nitrogen expected to be removed by the harvested portion of the crop (see Attachment D of Order No. R5-2010-0130 for details): Mid-season, if necessary to assess the need for additional nitrogen fertilizer during the growing season. Laboratory analyses for total nitrogen, expressed on a dry weight basis.
Soil 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): Laboratory analyses for soluble phosphorus *The following soil tests are recommended but not required:* Spring pre-plant for each crop: Laboratory analyses for: 0 to 1 foot depth: Nitrate-nitrogen and organic matter. 1 to 2 feet depth: Nitrate-nitrogen. Fall pre-plant for each crop: Laboratory analyses at depths below ground surface of: 0 to 1 foot: Electrical conductivity, nitrate-nitrogen, soluble phosphorus, potassium and organic matter. 1 to 2 feet: Nitrate-nitrogen.
Irrigation Water[2]
Each irrigation event for each land application area: Record volume (gallons or acre-inches)[3] and source (well or canal) of irrigation water applied and dates applied.

Table 3 (continued) WASTE AND NUTRIENT MONITORING
One irrigation event during each irrigation season during actual irrigation events: For each irrigation water source (well and canal): Electrical conductivity, total dissolved solids, and total nitrogen.[4] Data collected to satisfy the groundwater monitoring requirements (below) can be used to satisfy this requirement.

[1] The Discharger shall resume quarterly monitoring after the introduction of new feedstock or substantial change in existing feedstock.
[2] The Discharger shall monitor irrigation water (from each water well source and canal) that is used on Discharger land application areas.
[3] Dischargers with land application areas may utilize initial volume measurements as the total volume for all land application areas. Volume measurements for each irrigation source for each land application area shall be recorded no later than **1 October 2011**.
[4] In lieu of sampling the irrigation water, Dischargers with land application areas may provide equivalent data from the local irrigation district.

4. Monitoring of Surface Runoff

The Discharger shall monitor any discharges of process wastewater, storm water, and tailwater from the production area for the constituents and at the frequencies as specified in Table 4 below. Any discharge of process wastewater, storm water, or tailwater from the land application area(s) shall be monitored for the constituents and at the frequencies as specified in Table 5 below.

Table 4. DISCHARGE MONITORING FOR CENTRALIZED DAIRY MANURE DIGESTERS AND CO-DIGESTERS:
Discharges (Including Off-Property Discharges) of Process Wastewater and/or Digestate from the Production Area or Land Application Area Daily during each discharge: Record date, time, approximate volume (gallons) or weight (tons), duration, location, source, and ultimate destination of the discharge. Field measurements of the discharge for electrical conductivity, temperature, and pH. Laboratory analyses of the discharge for nitrate-nitrogen, total ammonia-nitrogen, un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, potassium, total dissolved solids, BOD_5[1], total suspended solids, and total and fecal coliform. Daily during each discharge to surface water: For surface water upstream[2] and downstream[3] of the discharge: Field measurements for electrical conductivity, temperature, dissolved oxygen, and pH. Laboratory analyses for nitrate-nitrogen, total ammonia-nitrogen, un-ionized ammonia-nitrogen, total Kjeldahl nitrogen, total phosphorus, potassium, total dissolved solids, total suspended solids, and total and fecal coliform. ***Storm Water Discharges to Surface Water from the Production Area*** Daily during each discharge to surface water: Record date, time, approximate volume, duration, location, source, and ultimate destination of the discharge.

Table 4 (continued). DISCHARGE MONITORING FOR CENTRALIZED DAIRY MANURE DIGESTERS AND CO-DIGESTERS:
For (1) the discharge and surface water (2) upstream and (3) downstream of the discharge: Field measurements of electrical conductivity, dissolved oxygen, temperature, pH, total ammonia-nitrogen, and unionized ammonia-nitrogen. Laboratory analyses for nitrate-nitrogen, turbidity, total phosphorus, and total and fecal coliform.
Storm Water Discharges to Surface Water from Each Land Application Area[4] First storm event of the wet season[5] and during the peak storm season (typically February)[6] each year from one third of the land application areas[7] with the land application areas sampled rotated each year[8]: Record date, time, approximate volume, duration, location, and ultimate destination of the discharge. Field measurements of the discharge for electrical conductivity, temperature, pH, total ammonia-nitrogen, and un-ionized ammonia-nitrogen. Laboratory analyses of the discharge for nitrate-nitrogen, total phosphorus, turbidity, and total and fecal coliform.
Tailwater Discharges to Surface Water from Land Application Areas[9] Each discharge from each land application area where irrigation has occurred less than 60 days after application of manure and/or process wastewater: Record date, time, approximate volume (gallons), duration, location, and ultimate destination of the discharge. Field measurements of discharge for electrical conductivity, temperature, pH, total ammonia-nitrogen, and un-ionized ammonia-nitrogen. First discharge of the year from any land application area where irrigation has occurred less than 60 days after application of manure and/or process wastewater: Laboratory analyses for nitrate-nitrogen, total phosphorus, and total and fecal coliform.

[1] Five-day biochemical oxygen demand.
[2] Upstream samples shall be taken just far enough upstream so as not to be influenced by the discharge.
[3] 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.
[4] Sample locations must be chosen such that the samples are representative of the quality and quantity of storm water discharged.
[5] This sample shall be taken 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.
[6] This sample shall be taken during 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.
[7] 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.
[8] 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).
[9] Tailwater samples shall be collected at the point of discharge to surface water.

a. If conditions are not safe for sampling, the Discharger must provide documentation of why samples could not be collected and analyzed. 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 waste management unit from which the discharge occurred.

b. Discharge and surface water sample analyses shall be conducted by a laboratory certified for such analyses by the California Department of Health Services. 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 Executive Officer.

c. All discharges shall be reported as specified in the Reporting Requirements (Priority Reporting of Significant Events and Annual Reporting) below, as appropriate.

d. The rationale for all discharge sampling locations shall be included in the Annual Report (in the Storm Water Report for storm water discharges from land application areas).

e. Parties interested in coordinating or combining surface water monitoring conducted by an individual dairy or group of dairies with monitoring conducted pursuant to the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto) may propose an alternative monitoring program for the Executive Officer's consideration. The alternative program shall not begin until the Discharger receives written approval from the Executive Officer.

5. Groundwater Monitoring

Dischargers shall sample each domestic and agricultural supply well and subsurface (tile) drainage system, present in the production and/or land application areas to characterize existing groundwater quality. This monitoring shall be conducted at the frequency and for the parameters specified in Table 5 below.

Table 5. GROUNDWATER MONITORING FOR DIGESTER/CO-DIGESTER FACILITIES WITH LAND APPLICATION AREAS
Domestic and Agricultural Supply Wells Annually: Field measurements of electrical conductivity and ammonium nitrogen[1]. Laboratory analyses of nitrate-nitrogen. Every five years (may be distributed over a 5-year period by sampling 20% of the wells annually): Laboratory analyses for general minerals (calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, chloride, and total dissolved solids). ***Subsurface (Tile) Drainage System*** Annually: Field measurements of electrical conductivity and ammonium nitrogen[1]. Laboratory analyses of nitrate-nitrogen, total phosphorus, and total dissolved solids.

[1] If field measurement indicates the presence of ammonium nitrogen, the discharger shall collect a sample for laboratory analysis of ammonium nitrogen.

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

b. Additional groundwater monitoring requirements are specified in Attachment A to this Order.

6. General Monitoring Requirements

a. The Discharger shall comply with the additional groundwater monitoring requirements specified in Attachment A to this Order either through individual groundwater monitoring or by participation in a Representative Monitoring Program as laid out in MRP Attachment A.

b. The Discharger shall comply with all the “Requirements Specifically for Monitoring Programs and Monitoring Reports” as specified in the Standard Provisions and Reporting Requirements.

c. Approved sampling procedures are listed on the Central Valley Water Board's web site at http://www.waterboards.ca.gov/centralvalley/available_documents/index.html#confined. When special procedures appear to be necessary at an individual dairy, the Discharger may request approval of alternative sampling procedures for nutrient management. The Executive Officer will review such requests and if adequate justification is provided, may approve the requested alternative sampling procedures.

d. 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.

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

f. 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.

g. 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.

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

i. Field test instruments used for temperature, pH, electrical conductivity, ammonia nitrogen, un-ionized ammonia nitrogen, and dissolved oxygen 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.

B. 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):

1. Centralized dairy manure digesters or co-digesters that operate land application areas shall provide all information necessary to document implementation and management of the Nutrient Management Plan, including the information described in Items 2 through 6 below;

2. All records for the production area including:

    a. Records documenting the inspections required under the Monitoring Requirements above;

    b. 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;

    c. Records of the date, time, and estimated volume of any overflow or bypass of the digester or any wastewater storage or conveyance structure;

    d. Steps and dates when action is taken to correct unauthorized releases as reported in accordance with Priority Reporting of Significant Events below;

    e. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5.; and

    f. For co-digester facilities, the volume, character, and origin of all imported feed stocks including copies of manifests and the results of chemical analyses required in Table 2 above.

3. All records for the land application area including:

    a. Expected and actual crop yields;

    b. Identification of crop, acreage, and dates of planting and harvest for each field;

    c. Dates, locations, and approximate weight and moisture content of manure applied to each field;

    d. Dates, locations, and volume of process wastewater applied to each field;

    e. Whether precipitation occurred, or standing water was present, at the time of manure and process wastewater applications and for 24 hours prior to and following applications;

f. Dates, locations, and test methods for soil, digestate, process wastewater, irrigation water, and plant tissue sampling;

g. Results from digestate, process wastewater, irrigation water, soil, plant tissue, discharge (including tailwater), and storm water sampling;

h. Explanation for the basis for determining digestate, or process wastewater application rates, as provided in the Technical Standards for Nutrient Management established by the Order (Attachment D);

i. Calculations showing the total nitrogen, total phosphorus, and potassium to be applied to each field, including sources other than process wastewater (Nutrient Budget);

j. Total amount of nitrogen, phosphorus, and potassium actually applied to each field, including documentation of calculations for the total amount applied (Nutrient Application Calculations);

k. The method(s) used to apply digestate, and/or process wastewater;

l. 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

m. Records of monitoring activities and laboratory analyses conducted as required in Standard Provisions and Reporting Requirements D.5.

4. Centralized dairy manure digesters or co-digesters that operate land application areas shall provide a copy of the Discharger's site-specific Nutrient Management Plan; and

5. All analyses of digestate, process wastewater, irrigation water, soil, plant tissue, discharges (including tailwater discharges), surface water, storm water, subsurface (tile) drainage, and groundwater.

C. REPORTING REQUIREMENTS

1. Priority Reporting of Significant Events (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.4, A.6, A.7, A.8, A.12, A.13, and A.14 in the 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. The 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:

a. 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;

b. A description of the noncompliance and its cause;

c. The flow rate, volume, and duration of any discharge involved in the noncompliance;

d. The amount of precipitation (in inches) the day of any discharge and for each of the seven days preceding the discharge;

e. 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 (Including Off-Property Discharges) of Manure or Process Wastewater, Digestate, or Other Dairy Waste from the Production Area or Land Application Area* and *Storm Water Discharges to Surface Water from the Production Area*;

f. The period of noncompliance, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue;

g. A time schedule and a plan to implement corrective actions necessary to prevent the recurrence of such noncompliance; and

h. 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.

2. Annual Reporting

An annual monitoring report is due by **1 July of each year**. It will consist of a General Section, Groundwater Reporting Section, and a Storm Water Reporting Section, as described below.

a. General Section

The General section of the annual report shall be completed on an annual report form provided by the Executive Officer (available on the Central Valley Water Board website at http://www.waterboards.ca.gov/centralvalley/water_issues/dairies/complying_with_general_order/software/index.shtml) and shall include all the information as specified below.

(1). Identification of the beginning and end dates of the annual reporting period;

(2). Amount of total digestate (tons), and process wastewater (gallons or acre-inches) generated by the facility during the annual reporting period; a calculation of the total nitrogen, total phosphorus, total potassium, and total salt content measured as fixed solids of the solid waste; and total dissolved solids of the liquid waste;

(3). Estimated amount of total digestate (tons) and process 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, total potassium, and total salt content measured as fixed solids (ash) of the solid waste and total dissolved solids of the liquid waste;

(4). Quantify the ratio of total nitrogen applied to land application areas and total nitrogen removed by crop harvest (nitrogen uptake).

(5). Total number of acres and the Assessor Parcel Numbers of properties that were used for land application of digestate, and process wastewater during the annual reporting period;

(6). Summary of all digestate, and process 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;

(7). Summary of all storm water discharges from the production area to surface water during the annual reporting period, including the date, time, approximate volume, duration, and location; a map showing the discharge and sample locations; rationale for sample locations; and method of measuring discharge flows; Copies of all manure/process wastewater tracking manifests for the reporting period;

(8). Summary of all 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., tailwater, process wastewater, or blended process wastewater); a map showing the discharge and sample locations; rationale for sample locations; and method of measuring discharge flows;

(9). 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 D of this Order;

(10). Copies of laboratory analyses of all discharges (digestate or process wastewater) to surface water (upstream and downstream of a discharge), including Chain of Custody forms and laboratory quality assurance/quality control (QA/QC) results; and

(11). Tabulated analytical data for samples of digestate, process wastewater, irrigation water, soil, and plant tissue. The data shall be tabulated to clearly show sample dates, constituents analyzed, constituent concentrations, and detection limits;

(12). If the amount of non-nutrient salt exceeded 2,000 pounds per acre for single crop fields or 3,000 pounds per acre for double crop fields, or site-specific salt loading limits, for any field, a statement indicating how the Salt Minimization Plan will be modified, or higher limits justified, to bring the facility back into compliance with the Order; and

(13). Results of the Record-Keeping Requirements for the production and land application areas specified in Record-Keeping Requirements B.2.b, B.2.c, B.3.a, B.3.b, B.3.c, B.3.d, B.3.e, B.3.j, and B.3.l above.

b. Groundwater Reporting Section

Groundwater monitoring results shall be included with the annual reports.

(1). Dischargers that monitor supply wells and subsurface (tile) drainage systems only 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). Dischargers that have 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 No. R5-2011-0039.

c. Storm Water Reporting Section

Storm water monitoring results will be included in the annual report. The report shall include a map showing all sample locations for all land application areas, rationale for all sampling locations, a discussion of how storm water 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 any modifications made to the facility or sampling plan in response to pollutants detected in storm water. The annual report must also include documentation if no significant discharge of storm water 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.

If the storm water monitoring for any land application area indicates pollutants have not been detected in storm water samples, the Discharger may propose to the Executive Officer to reduce the constituents and/or sampling frequency for that area.

(3). **General Reporting Requirements**

a. The results of any monitoring conducted more frequently than required at the locations specified herein shall be reported to the Central Valley Water Board.

b. 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 No. R5-2011-0039, 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.*"

c. For facilities in Fresno, Kern, Kings, Madera, Mariposa, and Tulare counties, submit reports to:

California Regional Water Quality Control Board
Central Valley Region
1685 E Street
Fresno, CA 93706
Attention: Confined Animal Regulatory Unit

For facilities in Butte, Lassen, Modoc, Plumas, Tehama, and Shasta counties, submit reports to:

California Regional Water Quality Control Board
Central Valley Region
415 Knollcrest Drive, Suite 100
Redding, CA 96002
Attention: Confined Animal Regulatory Unit

For facilities in all other counties, submit reports to:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670
Attention: Confined Animal Regulatory Unit

ORDERED BY:

Original signed by:

PAMELA C. CREEDON, Executive Officer

10 June 2011

Date

DAS: (5 April 2011)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2011-0039
ATTACHMENT A

GROUNDWATER MONITORING,
MONITORING WELL INSTALLATION AND SAMPLING PLAN
AND
MONITORING WELL INSTALLATION COMPLETION REPORT
FOR
CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

I. Groundwater Monitoring

The provisions of Attachment A are set out pursuant to the Executive Officer's authority under California Water Code (CWC) Section 13267 to order Dischargers to implement monitoring and reporting programs. The purpose of groundwater monitoring required by these provisions is to confirm that management practices being employed for the digester, wastewater retention system, and land application areas (if present), in light of the site conditions of a specific centralized dairy manure digester or co-digester facility, are protective of groundwater quality and comply with Groundwater Limitation D.1 of the Waste Discharge Requirements General Order for Centralized Dairy Manure Anaerobic Digester Or Centralized Dairy Manure Co-Digester Facilities (Order No. R5-2011-0039). The groundwater monitoring and reporting program does not apply to portions of above ground tank style digesters that are fitted with leak detection systems.

As an alternative to installing monitoring wells on an individual basis as set out in Section II, Dischargers subject to Order No. R5-2011-0039 may participate in a Representative Monitoring Program that meets the requirements set forth in Section III below. Dischargers choosing to participate in a Representative Monitoring Program must notify the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board). Notification to the Central Valley Water Board[1] must include identification of the Representative Monitoring Program that the Discharger intends to join. Dischargers choosing not to participate in a Representative Monitoring Program or those failing to notify the Central Valley Water Board of their decision to participate in a Representative Monitoring Program, will continue to be subject to the groundwater monitoring requirements of Order No. R5-2011-0039 and Monitoring and Reporting Program No. R5-2011-0039.

A Representative Monitoring Program is not a Discharger. Centralized dairy manure digester and centralized dairy manure co-digester facility owners and operators are Dischargers and are responsible and liable for individual compliance and for determining

[1] In lieu of individual discharger notifications to the Central Valley Water Board, a Representative Monitoring Program may provide to the Central Valley Water Board a list of participants that have signed up and met the initial requirements for participation in that Representative Monitoring Program.

if they are in compliance with the terms of Order No. R5-2011-0039. As set forth in Section III below, an eligible Representative Monitoring Program will convey information related to a Discharger's participation in the Representative Monitoring Program, conduct representative monitoring pursuant to an approved monitoring plan, and prepare and submit any required plans and monitoring reports. However, member Dischargers will be responsible for failure on the part of the Representative Monitoring Program to comply with Monitoring and Reporting Program No. R5-2011-0039.

If a Discharger participating in a Representative Monitoring Program wishes to terminate participation in the Program, the Discharger shall submit a Notice of Termination to the Executive Officer and the administrator of the Representative Monitoring Program. Administrators of a Representative Monitoring Program shall also notify the Executive Officer of a participant's failure to participate in their Representative Monitoring Program. A Representative Monitoring Program shall inform the Executive Officer of the participant's failure to participate within 45 days, which may result in the Executive Officer issuing a Notice of Termination to the Discharger stating that the Discharger is no longer able to participate in a Representative Monitoring Program as an alternative to individual groundwater monitoring. Termination from participation in a Representative Monitoring Program will occur on the date specified in the Notice of Termination, unless otherwise specified. Dischargers who voluntarily terminate their participation in a Representative Monitoring Program, receive a Notice of Termination from a Representative Monitoring Program, or receive a Notice of Termination from the Executive Officer, shall be individually subject to the groundwater monitoring requirements of Order No. R5-2011-0039 and Monitoring and Reporting Program No. R5-2011-0039.

Pursuant to Section 13267, the Executive Officer may, at any time, order implementation of individual groundwater monitoring at a centralized dairy manure digester or co-digester facility, even if the Discharger participates in a Representative Monitoring Program. Such order may occur, for instance, if violations of Order No. R5-2011-0039 are documented and/or the facility is found to be in an area where site conditions and characteristics pose a high risk to groundwater quality. In the event the Executive Officer orders implementation of individual groundwater monitoring to a participant of a Representative Monitoring Program, such an order shall constitute a Notice of Termination to the participant and the Discharger shall no longer be eligible to participate in a Representative Monitoring Program to comply with the groundwater monitoring requirements of Monitoring and Reporting Program No. R5-2011-0039.

II. Individual Requirements

1. The Discharger shall install sufficient monitoring wells to:

    a. Characterize groundwater flow direction and gradient beneath the site;

    b. Characterize natural background (unaffected by the Discharger or others) groundwater quality upgradient of the facility and upgradient of any land application areas operated by the Discharger; and

c. Characterize groundwater quality downgradient of the digester, downgradient of any retention ponds, and downgradient of any land application areas operated by the Discharger.

2. It may be necessary to install more than one upgradient monitoring well (i.e., for the production area and the land application area). The Executive Officer may order more extensive monitoring based on site-specific conditions.

3. Prior to installation of monitoring wells, the Discharger shall submit to the Executive Officer a Monitoring Well Installation and Sampling Plan (MWISP) (see below) and schedule prepared by, or under the direct supervision of, and certified by, a California registered civil engineer or a California registered geologist with experience in hydrogeology. Installation of monitoring wells shall not begin until the Executive Officer notifies the Discharger in writing that the MWISP is acceptable.

4. All monitoring wells shall be constructed in a manner that maintains the integrity of the monitoring well borehole and prevents the well (including the annular space outside of the well casing) from acting as a conduit for pollutant/contaminant transport. Each monitoring well shall be appropriately designed and constructed to enable collection of representative samples of the first encountered groundwater.

5. The construction and destruction of monitoring wells and supply wells shall be in accordance with the standards under *Water Wells* and *Monitoring Wells* in the *California Well Standards Bulletin 74-90 (June 1991)* and *Bulletin 74-81 (December 1981),* adopted by the Department of Water Resources (DWR). Should any county or local agency adopt more stringent standards than that adopted by the DWR, then these local standards shall supercede the Well Standard of DWR, and the Discharger shall comply with the more stringent standards. More stringent practices shall be implemented if needed to prevent the well from acting as a conduit for the vertical migration of waste constituents.

6. The horizontal and vertical position of each monitoring well shall be determined by a registered land surveyor or other qualified professional. The horizontal position of each monitoring well shall be measured with one-foot lateral accuracy using the North American Datum 1983 (NAD83 datum). The vertical elevations of each monitoring well shall be referenced to the North American Vertical Datum 1988 (NAVD88 datum) to an absolute accuracy of at least 0.5 feet and a relative accuracy between monitoring wells of 0.01 feet.

7. Within 45 days after completion of any monitoring well, the Discharger shall submit to the Executive Officer a Monitoring Well Installation Completion Report (MWICR) (see below) prepared by, or under the direct supervision of, and certified by, a California registered civil engineer or a California registered geologist with experience in hydrogeology.

8. The Discharger shall sample monitoring wells for the constituents and at the frequency as specified in Table 6 below. Groundwater monitoring shall include monitoring during periods of the expected highest and lowest water table levels.

Table 6. ADDITIONAL GROUNDWATER MONITORING
Monitoring Wells Quarterly[1]: Measurement of the depth to groundwater from a surveyed reference point to the nearest 0.01 foot in each monitoring well. Semi-annually: Field measurements of electrical conductivity, temperature, and pH. Laboratory analyses for nitrate and ammonia. Within six months of well construction and every two years thereafter: Laboratory analyses for general minerals (calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, and chloride).

[1] After two years of quarterly depth to groundwater measurements, the discharger may request reduction of frequency of depth to groundwater measurements to semi-annually upon demonstration there are no seasonal impacts to groundwater levels.

9. Groundwater samples from monitoring wells shall be collected as specified in the approved Monitoring Well Installation and Sampling Plan (MWISP).

10. The Discharger shall submit to the Executive officer an annual assessment of the groundwater monitoring data due 1 July of each year. The annual assessment may be attached to the annual report required in Section C of Monitoring and Reporting Program No. R5-2011-0039. The annual assessment shall include a tabulated summary of all analytical data collected to date including analytical lab reports for data collected during the past year. The assessment shall include an evaluation of the groundwater monitoring program's adequacy to assess compliance with the Order, including whether the data provided is representative of conditions upgradient and downgradient of the digester facility and any land application area operated by the Discharger. The assessment shall also include and evaluation of the groundwater monitoring data collected to date with a description of the statistical or non-statistical methods used. The assessment must use methods approved by the Executive Officer. If the Discharger determines that the analytical methods required by this Monitoring and Reporting Program are insufficient to identify whether site activities are impacting groundwater quality, the annual assessment must address Item II.11 below and employ the needed analyses during future monitoring events.

11. If the monitoring parameters required by this Monitoring and Reporting Program are insufficient to identify whether site activities are impacting groundwater quality, the Discharger must employ all reasonable chemical analyses to differentiate the source of the particular constituent. This includes, but is not limited to, analyses for a wider array of constituents and chemical isotopes.

12. Within six years of initiating sampling activities, the Discharger shall submit to the Executive Officer a summary report presenting a detailed assessment of the monitoring data to evaluate whether site activities associated with operation of the digester/co-digester or land application areas area operated by the Discharger have impacted groundwater quality. This summary report can be required at an earlier date if evaluation by the Discharger or Central Valley Water Board staff indicates that the assessment can be completed at an earlier date. This summary report shall also include detailed descriptions of management practices employed at the digester/co-digester and land application areas area operated by the Discharger along with the design standards of the wastewater retention system. The summary report must include an adequate technical justification for the conclusions incorporating available data and reasonable interpretations of geologic and engineering principles to identify management practices protective of groundwater quality. The summary report is subject to approval by the Executive Officer. If monitoring data indicate that Groundwater Limitation D.1 of Order No. R5-2011-0039 has been violated, this assessment shall include a description of changes in management practices and/or activities that will be undertaken to bring the facility into compliance. Annual reports required in Section C of Monitoring and Reporting Program No. R5-2011-0039 submitted after this summary report must include a discussion on implementation of changes in management practices and/or activities that are being taken and an evaluation of progress in complying with Groundwater Limitation D.1 of Order No. R5-2011-0039.

13. At any time during the term of this permit, the Central Valley Water Board may notify the Discharger to submit assessments of groundwater monitoring data (including the annual reports and the summary report) electronically. Data shall be submitted in a digital format acceptable to the Executive Officer.

III. Representative Monitoring Program Requirements

To establish a Representative Monitoring Program in lieu of individual groundwater monitoring, the Representative Monitoring Program must have Executive Officer approval of a submitted Monitoring and Reporting Workplan. The Monitoring and Reporting Workplan shall include sufficient information for the Executive Officer to evaluate the adequacy of the proposed groundwater monitoring program to serve as an alternative to the installation of individual groundwater monitoring wells at centralized dairy manure digesters or co-digesters and land application areas. The Monitoring and Reporting Workplan must explain how data collected at facilities that are monitored will be used to assess impacts to groundwater at facilities that are not part of the Representative Monitoring Program's network of monitoring wells. This information is needed to demonstrate whether collected facility monitoring data will allow identification of practices that are protective of water quality at all facilities represented by the Representative Monitoring Program, including those for which on-site data are not collected. The Monitoring and Reporting Workplan must additionally propose constituents the Representative Monitoring Program will monitor and the frequency of monitoring for each constituent identified. The Monitoring and Reporting Workplan must propose a list of

constituents that is sufficient to identify whether activities at facilities being monitored are impacting groundwater quality. The list of constituents may necessarily be greater than the constituents required to be monitored at sites under individual orders (as listed in Table 6), as failure to determine whether groundwater has been impacted at a monitored facility will impair the ability to extrapolate findings to facilities where monitoring does not occur. At a minimum the baseline constituents shall include those required of individual groundwater monitoring systems.

1. Once the Monitoring and Reporting Workplan is approved, the Representative Monitoring Program shall begin the process of installing monitoring wells as prescribed in paragraphs 3-7 below.

2. Prior to installation of monitoring wells, the Representative Monitoring Program shall submit to the Executive Officer a Monitoring Well Installation and Sampling Plan (MWISP) (see below) and schedule prepared by, or under the direct supervision of, and certified by, a California registered civil engineer or a California registered geologist with experience in hydrogeology. Installation of monitoring wells shall not begin until the Executive Officer notifies the Representative Monitoring Program in writing that the MWISP is acceptable. The MWISP must be submitted within 60 days of Executive Officer approval of the Monitoring and Reporting Workplan.

3. All monitoring wells shall be constructed in a manner that maintains the integrity of the monitoring well borehole and prevents the well (including the annular space outside of the well casing) from acting as a conduit for pollutant/contaminant transport. Each monitoring well shall be appropriately designed and constructed to enable collection of representative samples of the first encountered groundwater.

4. The construction and destruction of monitoring wells and supply wells shall be in accordance with the standards under *Water Wells* and *Monitoring Wells* in the *California Well Standards Bulletin 74-90 (June 1991)* and *Bulletin 74-81 (December 1981),* adopted by the Department of Water Resources (DWR). Should any county or local agency adopt more stringent standards than that adopted by the DWR, then these local standards shall supersede the Well Standard of DWR, and the Representative Monitoring Program shall comply with the more stringent standards. More stringent practices shall be implemented if needed to prevent the well from acting as a conduit for the vertical migration of waste constituents.

5. The horizontal and vertical position of each monitoring well shall be determined by a registered land surveyor or other qualified professional. The horizontal position of each monitoring well shall be measured with one-foot lateral accuracy using the North American Datum 1983 (NAD83 datum). The vertical elevations of each monitoring well shall be referenced to the North American Vertical Datum

6. Within 45 days after completion of any monitoring well network, the Representative Monitoring Program shall submit to the Executive Officer a Monitoring Well Installation Completion Report (MWICR) (see below) prepared by, or under the direct supervision of, and certified by, a California registered civil engineer or a California registered geologist with experience in hydrogeology. In cases where monitoring wells are completed in phases or completion of the network is delayed for any reason, monitoring well construction data are to be submitted within 180 days of well completion, even if this requires submittal of multiple reports.

7. Once the groundwater monitoring network is installed pursuant to an approved Monitoring and Reporting Workplan and paragraphs 3-6 above, the Representative Monitoring Program shall sample monitoring wells for the constituents and at the frequencies as specified in the approved Monitoring and Reporting Workplan. Groundwater monitoring shall include monitoring during periods of the expected highest and lowest water table levels. In cases where the monitoring wells are completed in phases or completion of the monitoring well network is delayed for any reason, collection and analysis of groundwater samples from each well is to commence within 180 days of completion of that well.

8. Groundwater samples from monitoring wells shall be collected as specified in an approved MWISP.

9. The Representative Monitoring Program shall submit to the Executive Officer an Annual Representative Monitoring Report (ARMR). The ARMR shall be due by 1 April of each year and shall include all data (including analytical reports) collected during the previous calendar year. The ARMR shall also contain a tabulated summary of data collected to date by the Representative Monitoring Program. The ARMR shall describe the monitoring activities conducted by the Representative Monitoring Program, and identify the number and location of installed monitoring wells and other types of monitoring devices. Within each ARMR, the Representative Monitoring Program shall evaluate the groundwater monitoring data to determine whether groundwater is being impacted by activities at facilities being monitored by the Representative Monitoring Program. The submittal shall include a description of the methods used in evaluating the groundwater monitoring data. Each ARMR shall include an evaluation of whether the representative monitoring program is on track to provide the data needed to complete the summary report (detailed in Item III.10 below). If the evaluation concludes that information needed to complete the summary report may not be available by the required deadline, the ARMR shall include measures that will be taken to bring the program back on track.

The ARMR shall include an evaluation of data collected to date and an assessment of whether monitored centralized dairy manure digesters or co-digesters are implementing management practices that are protective of groundwater quality. If the management practices being implemented at a centralized dairy manure digester or co-digester being monitored are found to not be protective of groundwater quality, the Executive Officer may issue an order to the owner/operator of the monitored centralized dairy manure digester or co-digester to identify and implement management practices that are protective of groundwater quality prior to submittal of the report described in Item III.10 below.

10. No later than six (6) years following submittal of the first ARMR, the Representative Monitoring Program shall submit a Summary Representative Monitoring Report (SRMR) identifying management practices that are protective of groundwater quality for the range of conditions found at facilities covered by the Representative Monitoring Program. The identification of management practices for the range of conditions must be of sufficient specificity to allow participants covered by the Representative Monitoring Program and the Central Valley Water Board to identify which practices at monitored facilities are appropriate for facilities with a corresponding range of site conditions, and generally where such facilities may be located within the Central Valley (e.g., the summary report may need to include maps of the Central Valley that identify the types of management practices that should be implemented in certain areas based on specified site conditions). The summary report must include an adequate technical justification for the conclusions incorporating available data and reasonable interpretations of geologic and engineering principles to identify management practices protective of groundwater quality. The summary report is subject to approval by the Executive Officer.

11. Assessments of groundwater monitoring data (including the annual reports and the summary report) are to be submitted electronically. Data shall be submitted in an electronic format acceptable to the Executive Officer.

12. On July 1 following Executive Officer approval of the SRMR, each Discharger that is a participant covered by a Representative Monitoring Program shall include in their annual report required in Section C of Monitoring and Reporting Program No. R5-2011-0039 a description of management practices currently being implemented at their digester, wastewater retention system(s), land application area(s), and animal confinement area(s). If these management practices are not confirmed to be protective of groundwater quality based on information contained in the SRMR, and therefore are not confirmed to be sufficient to ensure compliance of the facility with Groundwater Limitation D.1 of Order No. R5-2011-0039 the Discharger's annual report shall identify which alternative management practices the participant intends to implement at its centralized dairy manure digester/co-digester facility (based on the findings of the SRMR). Management practices deemed to be protective of groundwater quality are subject to approval by the Executive Officer. With each annual report

submitted after the first report following Executive Officer approval of the SRMR, each participant shall include within his or her annual report an update with respect to implementation of the additional or alternative management practices being employed by the Discharger to protect groundwater quality.

13. Within three months of joining a Representative Monitoring Program, each Discharger that is a participant covered by a Representative Monitoring Program shall submit to the Central Valley Water Board a letter stating that they are voluntarily joining the Representative Monitoring Program, they are aware of the conditions and requirements to be a member of the Program, they intend to fully comply with the monitoring and reporting program and intent of the Program, and they are fully aware failure to comply with the Program may result in their removal from the Program and that they may be subject to enforcement by the Central Valley Water Board.

IV. Monitoring Well Installation and Sampling Plan (MWISP) (Applicable to both Individual and Representative Monitoring Program Requirements)

At a minimum, the MWISP must contain all of the information listed below.

1. General Information:

   a. Topographic map showing any existing nearby (about 2,000 feet) domestic, irrigation, and municipal supply wells and monitoring wells known to the Discharger, utilities, surface water bodies, drainage courses and their tributaries/destinations, and other major physical and man-made features, as appropriate.

   b. Site plan showing proposed well locations, other existing wells, unused and/or abandoned wells, major physical site structures (such as the digester/co-digester, gas cleaning operations, and feedstock storage areas), waste handling facilities (including retention ponds, digestate and gas cleaning waste storage areas), irrigated cropland and pasture under the Discharger's control, and on-site surface water features (canals, tailwater ponds, streams, recharge basins, etc.).

   c. Rationale for the number of proposed monitoring wells, their locations and depths, and identification of anticipated depth to groundwater. In the case of a Representative Monitoring Program, this information must include an explanation of how the location, number, and depths of wells proposed will result in the collection of data that can be used to assess groundwater at sites with a variety of conditions that have joined the Representative Monitoring Program but are not being monitored as part of the monitoring network.

d. Local permitting information (as required for drilling, well seals, boring/well abandonment).

e. Drilling details, including methods and types of equipment for drilling and logging activities. Equipment decontamination procedures (as appropriate) should be described.

f. Health and Safety Plan.

2. Proposed Drilling Details:

a. Drilling techniques.

b. Well logging method.

3. Proposed Monitoring Well Design—all proposed well construction information must be displayed on a construction diagram or schematic to accurately identify the following:

a. Well depth.

b. Borehole depth and diameter.

c. Well construction materials.

d. Casing material and diameter—include conductor casing, if appropriate.

e. Location and length of perforation interval, size of perforations, and rationale.

f. Location and thickness of filter pack, type and size of filter pack material, and rationale.

g. Location and thickness of bentonite seal.

h. Location, thickness, and type of annular seal.

i. Surface seal depth and material.

j. Type of well cap(s).

k. Type of well surface completion.

l. Well protection devices (such as below-grade water-tight vaults, locking steel monument, bollards, etc.).

4. Proposed Monitoring Well Development:

    a. Schedule for development (not less than 48 hours or more than 10 days after well completion).

    b. Method of development.

    c. Method of determining when development is complete.

    d. Parameters to be monitored during development.

    e. Method for storage and disposal of development water.

5. Proposed Surveying:

    a. How horizontal and vertical position of each monitoring well will be determined.

    b. The accuracy of horizontal and vertical measurements to be obtained.

    c. The California licensed professional (licensed land surveyor or civil engineer) to perform the survey.

6. Proposed Groundwater Monitoring:

    a. Schedule (at least 48 hours after well development).

    b. Depth to groundwater measuring equipment (e.g., electric sounder or chalked tape capable of ±0.01-foot measurements).

    c. Well purging method, equipment, and amount of purge water.

    d. Sample collection (e.g., bottles and preservation methods), handling procedures, and holding times.

    e. Quality assurance/quality control (QA/QC) procedures (as appropriate).

    f. Analytical procedures.

    g. Equipment decontamination procedures (as appropriate).

7. Proposed Schedule:

    a. Fieldwork.

    b. Laboratory analyses.

c. Report submittal.

V. Monitoring Well Installation Completion Report (MWICR)

At a minimum, the MWICR shall summarize the field activities as described below.

1. General Information:

   a. Brief overview of field activities including well installation summary (such as number, depths), and description and resolution of difficulties encountered during field program.

   b. Topographic map showing any existing nearby domestic, irrigation, and municipal supply wells and monitoring wells, utilities, surface water bodies, drainage courses and their tributaries/destinations, and other major physical and man-made features.

   c. Site plan showing monitoring well locations, other existing wells, unused and/or abandoned wells, major physical site structures (such as the digester/co-digester, gas cleaning operations, and feedstock storage areas), waste handling facilities (including retention ponds, digestate and gas cleaning waste storage areas), irrigated cropland and pasture under the Discharger's control, and on-site surface water features (canals, tailwater ponds, streams, recharge basins, etc.).

   d. Period of field activities and milestone events (e.g., distinguish between dates of well installation, development, and sampling).

2. Monitoring Well Construction:

   a. Number and depths of monitoring wells installed.

   b. Monitoring well identification (i.e., numbers).

   c. Date(s) of drilling and well installation.

   d. Description of monitoring well locations including field-implemented changes (from proposed locations) due to physical obstacles or safety hazards.

   e. Description of drilling and construction, including equipment, methods, and difficulties encountered (such as hole collapse, lost circulation, need for fishing).

   f. Name of drilling company, driller, and logger (site geologist to be identified).

g. As-builts for each monitoring well with the following details:

   i. Well identification.

   ii. Total borehole and well depth.

   iii. Date of installation.

   iv. Boring diameter.

   v. Casing material and diameter (include conductor casing, if appropriate).

   vi. Location and thickness of slotted casing, perforation size.

   vii. Location, thickness, type, and size of filter pack.

   viii. Location and thickness of bentonite seal.

   ix. Location, thickness, and type of annular seal.

   x. Depth of surface seal.

   xi. Type of well cap.

   xii. Type of surface completion.

   xiii. Depth to water (note any rises in water level from initial measurement) and date of measurement.

   xiv. Well protection device (such as below-grade water-tight vaults, stovepipe, bollards, etc).

h. All depth to groundwater measurements during field program.

i. Field notes from drilling and installation activities (e.g., all subcontractor dailies, as appropriate).

j. Construction summary table of pertinent information such as date of installation, well depth, casing diameter, screen interval, bentonite seal interval, and well elevation.

3. Monitoring Well Development:

   a. Date(s) and time of development.

   b. Name of developer.

   c. Method of development.

   d. Methods used to identify completion of development.

   e. Development log: volume of water purged and measurements of temperature, pH, and electrical conductivity during and after development.

   f. Disposition of development water.

   g. Field notes (such a bailing to dryness, recovery time, number of development cycles).

4. Monitoring Well Survey:

   a. Identify coordinate system or reference points used.

   b. Description of measuring points (e.g., ground surface, top of casing, etc.).

   c. Horizontal and vertical coordinates of well casing with cap removed.

   d. Name, license number, and signature of California licensed professional who conducted survey.

   e. Surveyor’s field notes.

   f. Tabulated survey data.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2011-0039
FOR
CENTRALIZED DAIRY MANURE ANAEROBIC DIGESTER OR CENTRALIZED DAIRY MANURE CO-DIGESTER FACILITIES

10 DECEMBER 2010

A. Introduction:

1. These Standard Provisions and Reporting Requirements (SPRR) are applicable to dairies that are regulated pursuant to the provisions of Title 27 California Code of Regulations (CCR) Division 2, Subdivision 1, Chapter 7, Subchapter 2, Article 1. Dairy digesters and co-digesters are regulated herein under Title 27 Section 20090(b) which exempts discharges of designated waste to land from Title 27 containment standards and other Title 27 requirements provided exemption criteria are met.

2. Any violation of the Order constitutes a violation of the California Water Code and, therefore, may result in enforcement action.

3. If there is any conflicting or contradictory language between the Order, the Monitoring and Reporting Program (MRP) associated with the Order, or the SPRR, then language in the Order shall govern over the MRP and the SPRR, and language in the MRP shall govern over the SPRR.

B. Standard Provisions:

1. The requirements prescribed in the Order do not authorize the commission of any act causing injury to the property of another, or protect the Discharger from liabilities under federal, state, or local laws.

2. The Discharger shall comply with all federal, state, county, and local laws and regulations pertaining to the discharge of wastes from the facility that are at least as stringent as the requirements of the Order.

3. All discharges from the facility must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of storm water to storm drain systems or to other courses under their jurisdiction that are at least as stringent as the requirements of the Order.

4. The Order does not convey any property rights or exclusive privileges.

5. The provisions of the Order are severable. If any provision of the Order is held invalid, the remainder of the Order shall not be affected.

6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with the Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.

7. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the Order shall not be a defense for violations of the Order by the Discharger.

8. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of the Order, or notification of planned changes or anticipated noncompliance, does not stay any condition of the Order.

9. The Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may modify or revoke and reissue the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the California Water Code.

10. The Discharger shall provide to the Executive Officer, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating the Discharger's coverage under the Order or to determine compliance with the Order. The Discharger shall also provide to the Executive Officer upon request, copies of records required by the Order to be kept.

11. After notice and opportunity for a hearing, the Order may be terminated or modified for cause, including but not limited to:

    a. Violation of any term or condition contained in the Order;

    b. Obtaining the Order by misrepresentation, or failure to disclose fully all relevant facts;

    c. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or

    d. A material change in the character, location, or volume of discharge.

12. The Order may be modified if new state statutes or regulations are promulgated, and if more stringent applicable water quality standards are approved pursuant to Title 27 of the CCR, or as adopted into the Central Valley Water Board *Water Quality Control Plans for the Sacramento River and San Joaquin River,* Fourth Edition, revised September 2009 and the *Water Quality Control Plan for the Tulare Lake*

Basin Second Edition, revised January 2004 (Basin Plans). The Order may also be modified for incorporation of land application plans, and/or changes in the waste application to cropland.

13. The Central Valley Water Board may review and revise the Order at any time upon application of any affected person or by motion of the Central Valley Water Board.

14. The Discharger shall ensure compliance with existing and/or future promulgated standards that apply to the discharge.

15. The Discharger shall permit representatives of the Central Valley Water Board and the State Water Resources Control Board (State Water Board), upon presentations of credentials at reasonable hours, to:

    a. Enter premises where wastes are treated, stored, or disposed and where any records required by the Order are kept;

    b. Copy any records required to be kept under terms and conditions of the Order;

    c. Inspect facilities, equipment (monitoring and control), practices, or operations regulated or required by the Order; and

    d. Sample, photograph, and/or video tape any discharge, waste, waste management unit, or monitoring device.

16. The Discharger shall properly operate and maintain in good working order any facility, unit, system, or monitoring device installed to achieve compliance with the Order. Proper operation and maintenance includes best practicable treatment and controls, and the appropriate quality assurance procedures.

17. Animal waste, wastewater, feedstock storage, digestate storage areas, and containment structures shall be designed, constructed, and maintained to limit, to the greatest extent possible, infiltration, inundation, erosion, slope failure, washout, overtopping, by-pass, and overflow.

18. Setbacks or separation distances contained under Water Wells, Section 8, Part II, in the *California Well Standards, Supplemental Bulletin 74-90 (June 1991)*, and *Bulletin 94-81 (December 1981),* California Department of Water Resources (DWR), shall be maintained for the installation of all monitoring wells and groundwater supply wells at existing dairies. A setback of 100 feet is required between supply wells and animal enclosures in the production area. A minimum setback of 100 feet, or other control structures (such as housing, berming, grading), shall be required for the protection of existing wells or new wells installed in the cropland. If a county or local agency adopts more stringent setback standards than that adopted by the DWR, then these local standards shall carry precedence over the Well Standards of DWR, and the Discharger shall comply with the more stringent standards.

19. Following any storm event that causes the freeboard of any wastewater holding pond to be less than one (1) foot for below-grade ponds, or two (2) feet for above-grade ponds, the Discharger shall take action as soon as possible to provide the appropriate freeboard in the wastewater holding pond.

20. For any electrically operated equipment at the facility, the failure of which would cause loss of control or containment of waste materials, or violation of this Order, the Discharger shall employ safeguards to prevent loss of control over wastes or violation of this Order. Such safeguards may include alternate power sources, standby generators, standby pumps, additional storage capacity, modified operating procedures, or other means.

C. General Reporting Requirements:

1. The Discharger shall give at least 60 days advance notice to the Central Valley Water Board of any planned changes in the ownership or control of the facility.

2. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of the Order by letter at least 60 days in advance of such change, a copy of which shall be immediately forwarded to the appropriate Central Valley Water Board office listed below in the General Reporting Requirements C.11.

3. To assume operation under the Order, any succeeding owner or operator must request, in writing, that the Executive Officer transfer coverage under the Order. The Central Valley Water Board will provide a form for this request that will allow the succeeding owner or operator to provide their full legal name, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a responsibility statement and a signed statement in compliance with General Reporting Requirement C.8 below. The form will also include a statement for signature that the new owner or operator assumes full responsibility for compliance with the Order and that the new owner or operator will implement the Waste Management Plan and the NMP prepared by the preceding owner or operator. Transfer of the Order shall be approved or disapproved in writing by the Executive Officer. The succeeding owner or operator is not authorized to discharge under the Order and is subject to enforcement until written approval of the coverage transfer from the Executive Officer.

4. The Executive Officer may require the Discharger to submit technical reports pursuant to the Order and California Water Code Section 13267.

5. The Discharger shall identify any information that may be considered to be confidential under state law and not subject to disclosure under the Public Records Act. The Discharger shall identify the basis for confidentiality. If the Executive

Officer cannot identify a reasonable basis for treating the information as confidential, the Executive Officer will notify the Discharger that the information will be placed in the public file unless the Central Valley Water Board receives, within 10 calendar days, a written request from the Discharger to keep the information confidential containing a satisfactory explanation supporting the information's confidentiality.

6. Except for data determined to be exempt from disclosure under the Public Records Act (California Government Code Sections 6275 to 6276), and data determined to be confidential under Section 13267(b)(2) of the California Water Code, all reports prepared in accordance with the Order and submitted to the Executive Officer shall be available for public inspection at the offices of the Central Valley Water Board. Data on waste discharges, water quality, meteorology, geology, and hydrogeology shall not be considered confidential.

7. All technical reports and monitoring program reports shall be accompanied by a cover letter with the certification specified in C.8 below and be signed by a person identified below:

   a. For a sole proprietorship: by the proprietor;

   b. For a partnership: by a general partner;

   c. For a corporation: by a principal executive officer of at least the level of senior vice-president; or

   d. A duly authorized representative if:

      (1) The authorization is made in writing by a person described in Subsection a, b, or c of this provision;

      (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility, such as the position of manager. A duly authorized representative may thus be either a named individual or an individual occupying a named position; and

      (3) The written authorization is submitted to the Central Valley Water Board.

8. Each person, as specified in C.7 above, signing a report required by the Order or other information requested by the Central Valley Water Board shall make the following certification:

   "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."

9. In addition to Item C.7 above, all technical reports required in the Order that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by, or under the direction of, and signed by persons registered to practice in California pursuant to California Business and Professions Code, Sections 6735, 7835, and 7835.1 or federal officers and employees who are exempt from these Sections by California Business and Professions Code, Section 6739 or 7836. To demonstrate compliance with Title 16 CCR, Sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

10. The Discharger shall file a Report of Waste Discharge with the Central Valley Water Board at least 140 days before making any material change in the operation of the dairy or digester/co-digester facilities. A material change includes, but is not limited to, the following:

    a. The addition of a new wastewater source that results in a significant change in the volume or character of the waste;

    b. Significantly changing the disposal or waste application method or location;

    c. Significantly changing the method of treatment;

    d. Increasing the discharge flow beyond that specified in the Order; and/or

    e. Expanding existing herd size beyond 15 percent.

11. All reports shall be submitted to the following address:

    For facilities in Fresno, Kern, Kings, Madera, Mariposa, and Tulare counties, submit reports to:

    California Regional Water Quality Control Board
    Central Valley Region
    1685 E Street
    Fresno, CA 93706
    Attention: Confined Animal Regulatory Unit

    For facilities in Butte, Lassen, Modoc, Plumas, Tehama, and Shasta counties, submit reports to:
    California Regional Water Quality Control Board

Central Valley Region
415 Knollcrest Drive, Suite 100
Redding, CA 96002
Attention: Confined Animal Regulatory Unit

For facilities in all other counties, submit reports to:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670
Attention: Confined Animal Regulatory Unit

D. Requirements Specifically for Monitoring Programs and Monitoring Reports:

1. The Discharger shall file self-monitoring reports and/or technical reports in accordance with the detailed specifications contained in the Order and in the MRP attached to the Order.

2. The Discharger shall maintain a written monitoring program sufficient to assure compliance with the terms of the Order. Anyone performing monitoring on behalf of the Discharger shall be familiar with the written program.

3. The monitoring program shall include observation practices, sampling procedures, and analytical methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points.

4. All instruments and devices used by the Discharger for the monitoring program shall be properly maintained and shall be calibrated as recommended by the manufacturer and at least once annually to ensure their continued accuracy.

5. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by the Order, and records of all data used to complete the reports. Records shall be maintained for a minimum of five years from the date of sample, measurement, report, or application. Records shall also be maintained after facility operations cease if wastes that pose a threat to water quality remain at the site. This five-year period may be extended during the course of any unresolved litigation regarding the discharge or when requested in writing by the Central Valley Water Board Executive Officer.

   a. Records of on-site monitoring activities shall include the:

      (1) Date that observations were recorded, measurements were made, or samples were collected;

(2) Name and signature of the individual(s) who made the observations, made and recorded the measurements, or conducted the sampling;

(3) Location of measurements or sample collection;

(4) Procedures used for measurements or sample collection;

(5) Unique identifying number assigned to each sample; and

(6) Method of sample preservation utilized.

b. Records of laboratory analyses shall include the:

(1) Results for the analyses performed on the samples that were submitted;

(2) Chain-of-custody forms used for sample transport and submission;

(3) Form that records the date that samples were received by the laboratory and specifies the analytical tests requested;

(4) Name, address, and phone number of the laboratory which performed the analysis;

(5) Analytical methods used;

(6) Date(s) analyses were performed;

(7) Identity of individual(s) who performed the analyses or the lab manager; and

(8) Results for the quality control/quality assurance (QA/QC) program for the analyses performed.

E. Enforcement

1. California Water Code Section 13350 provides that any person who violates WDRs or a provision of the California Water Code is subject to civil liability of up to $5,000 per day or $15,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil liability of up to $10 per gallon, or $20 per gallon; or some combination thereof, depending on the violation, or upon the combination of violations. In addition, there are a number of other enforcement provisions that may apply to violation of the Order.

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. R5-2011-0039 (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 (68º to 105º 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 (110º to 160º 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 (H_2S0_4). 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 ($CaCO_3$) 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 of 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 do-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 diary 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 meeting s 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. R5-2011-0039. 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. R5-2011-0039 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.

Kerry Elliott - Centralized digester WDR

From: Paul Martin <paulwud@callatg.com>
To: 'David Sholes' <dsholes@waterboards.ca.gov>
Date: 04/11/2011 5:28 PM
Subject: Centralized digester WDR

Hi David –
From my reading of the WDR it appears that a couple of things cause me questions.

(1) Is there no allowance for the digested solids to go to uses besides land application? I envision an opportunity, albeit some time down the road; that this kind of material could go to a biomass plant of some kind, burner, gasifier, etc. This could be an on-site operation, which would seem to be allowed, but may equally be somewhere off-site. Is there provision to handle this?

(2) It also appears that there is a prohibition to applying the digested product to any land other than dairy land. Even the dairy Order allows for off-site use on non-dairy cropland. Maybe I read it incorrectly, but can you please clarify for me?

Will read further, but these are my current questions.
Thanks –
Paul

Regional Water Quality Control Board
Central Valley Region
Board Meeting – 8/9/10 June 2011

Response to Written Comments for General Order for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities Tentative Waste Discharge Requirements

At a public hearing scheduled for 8/9/10 June 2011, the Central Valley Water Board will consider adoption of General Order for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co-digester Facilities. This document contains responses to written comments received from interested parties regarding the tentative Waste Discharge Requirements (WDRs) circulated on 5 April 2011. Written comments were received from:

1. Western United Dairymen

1 WESTERN UNITED DAIRYMEN

COMMENT 1.1: Is there no allowance for the digested solids to go to uses besides land application? I envision an opportunity, albeit some time down the road that this kind of material could go to a biomass plant of some kind, burner, gasifier, etc. This could be an on-site operation, which would seem to be allowed, but may equally be somewhere off-site. Is there provision to handle this?

RESPONSE 1.1: The Order only allows off-site use of centralized digester wastes for land application to lands owned, leased, or controlled by the discharger, or to another waste applicator separately regulated under the Order, or the Dairy General Order. The waste could be transported off site for another type of use as long as the facility to which it is sent has waste discharge requirements or a waiver from the Central Valley Water Board that permits it to accept such waste.

COMMENT 1.2: It also appears that there is a prohibition to applying the digested product to any land other than dairy land. Even the dairy Order allows for off-site use on non-dairy cropland. Maybe I read it incorrectly, but can you please clarify for me?

RESPONSE 1.2: Centralized digester wastes may be applied to non-dairy cropland provided the land is covered by the Order.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
1685 E Street, Fresno, California 93706

PUBLIC HEARING

concerning

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

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) has released a tentative Waste Discharge Requirements General Order for Centralized Dairy Manure Anaerobic Digester or Centralized Dairy Manure Co- Digester Facilities (Order). The proposed Order will serve as general Waste Discharge Requirements (WDRs) for discharges of centralized dairy manure digester or co-digester waste. This Order will apply 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.

A public hearing concerning this matter will be held during the Central Valley Water Board meeting, which is scheduled for:

DATE:	8, 9 or 10 June 2011
TIME:	To be specified in final meeting agenda (see below).
PLACE:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114

The tentative Order was issued on 5 April 2011. Persons wishing to comment on this item must submit testimony, evidence, if any, and/or comments in writing to the Central Valley Water Board no later than by noon on **5 May 2011**. Written materials submitted after noon on the above date will not be accepted and will not be incorporated into the administrative record absent a ruling by the Central Valley Water Board Chair.

All interested persons may speak at the Central Valley Water Board meeting, and are expected to orally summarize their written submittals. Oral testimony will be limited in time by the Central Valley Water Board Chair. Interested persons may be asked to respond to clarifying questions from Central Valley Water Board members, counsel staff or others, at the discretion of the Central Valley Water Board.

Anyone having questions on the tentative Order should contact David Sholes at (559) 445-6279. Interested parties may download the proposed Order and related documents from the Central Valley Water Board's Internet website at

http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/. Copies of these documents can also be obtained by contacting or visiting the office of the Central Valley Water Board at 1685 E Street, Fresno, California, 93706, weekdays between 8:00 a.m. and 5:00 p.m. by appointment.

The final meeting agenda will be available at http://www.waterboards.ca.gov/board_info/agendas/ at least ten days before the meeting. The agenda will provide the dates the Central Valley Water Board meeting will be held, indicate the anticipated order of agenda items, and may include staff revisions to the proposed order(s).

The procedures governing Central Valley Water Board meetings may be found at Title 23, California Code of Regulations, Section 647 et seq. and are available upon request. Hearings before the Central Valley Water Board are not conducted pursuant to Government Code section 11500 et seq. The procedures may be obtained by accessing http://www.waterboards.ca.gov/laws_regulations/. Information on meeting and hearing procedures is also available on the Board's website at http://www.waterboards.ca.gov/centralvalley/board_info/meetings/mtgprocd.shtml or by contacting any one of the Central Valley Water Board's offices. Questions regarding such procedures should be directed to Ms. Kiran Lanfranchi-Rizzardi at (916) 464-4839.

The hearing facilities will be accessible to persons with disabilities. Individuals requiring special accommodations are requested to contact Ms. Kiran Lanfranchi-Rizzardi at (916) 464-4839 at least 5 working days prior to the meeting. TTY users may contact the California Relay Service at 1-800-735-2929 or voice line at 1-800-735-2922.

Please bring the above information to the attention of anyone you know who would be interested in this matter.

Original signed by:

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DOUGLAS K. PATTESON, Supervising WRCE

5 April 2011