Attachment C

Facility-Specific Salt and Nutrient Management Plan (FSNMP)

Owners and operators of wine, beverage and food processors (hereinafter identified as "Permittees") seeking coverage under the General Waste Discharge Requirements for Discharges of Wine, Beverage, and Food Processor waste to Land, Order No. R1-2014-0041 (Order) and who apply treated process water or solid non-hazardous, decomposable processor waste to land as a source of nutrients or as a soil amendment are required to develop and implement a Facility Salt and Nutrient Management Plan (FSNMP).

A. FSNMP Purpose and Implementation

The purpose of the FSNMP is to identify the management practices used at the Facility to minimize adverse impacts to groundwater and surface water from leaching and runoff from the land application areas. The FSNMP is specific for a particular Facility and considers both waste reduction activities and land application activities. The waste reduction component of the FSNMP will identify the contributing sources of salts and other chemicals, and the steps taken to reduce these inputs. The land application component of the FSNMP will identify the crop being grown, the nutrient requirements of that crop, all nutrient sources for the crop, soil types, climate and other local conditions for the land application area, land application activities and best management practices to be implemented.

All nutrient applications to a designated land application area must be made in accordance with the FSNMP. The FSNMP shall be updated in response to changing conditions and the results of monitoring.

For Facilities covered by the Order, the land application component of the SNMP must be developed by the Permittee with the assistance of specialists such as a California state licensed engineer or geologist with experience in nutrient management or those with a degree in or certification from: Soil Scientist, Agronomist, Crop Advisor, University of California Cooperative Extension (UCCE) service advisor or technician, or a Technical Service Provider certified by the Natural Resources Conservation Service (NRCS). In particular, Permittees shall get assistance from these specialists in completing the nutrient budget calculations. Regional Water Board staff may approve the use of other qualified specialists.

Development of the SNMP can begin upon applying for coverage under the Order. For instance, the NOI (Attachment A) collects initial information for starting a SNMP. The Permittee then has up to one (1) year to work with professionals and specialists to develop and fully implement their SNMP.

The most current version of the FSNMP must be submitted to the Regional Water Board for approval and kept at the Facility for review by Regional Water Board staff during inspections.

The FSNMP shall be revised within 30 days when discharges from a land application area result in exceedence of water quality objectives. The FSNMP shall be revised within 90 days when any of the following occur: (1) site-specific information becomes available to replace default values used in the initial FSNMP, (2) changes in operating practices result in the production of nutrients that are not addressed by the FSNMP, (3) crops will be grown that are not covered by the FSNMP, (4) there is a change of 15% or more in the acreage used for land application, or (5) the FSNMP is not effective in preventing periodic discharges of process water to surface waters.

The Permittee shall review the FSNMP annually and revise it if changes in conditions or practices at the Facility require changes in the FSNMP. The review/revision date must be noted in the FSNMP. Records on the timing and amounts of solids and process water applied to land and information developed through a Monitoring and Reporting Program (MRP) associated with the Order must be considered when making decisions related to nutrient management.

B. Management of Process Wastewater and Processing Solids

Compliance with the following management measures is required once the Permittee begins implementation of the FSNMP.

1. The collection, treatment, storage, or land application of process wastewater and non-hazardous, decomposable, processing solids shall not result in:
   a. degradation of groundwater or surface water;
   b. contamination or pollution of groundwater or surface water, or
   c. a condition of nuisance (as defined by the California Water Code section 13050).

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

2. The land application of treated process wastewater or non-hazardous, decomposable, processing solids shall not violate any applicable local, state, or federal laws or regulations or contribute to an exceedance of any applicable water quality objective in the Basin Plan or of any applicable state or federal water quality criteria.

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

4. The application of treated wastewater and non-hazardous, decomposable, processing solids water to land shall be in accordance with the FSNMP.

C. Contents of FSNMP

The FSNMP must contain the following components:

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

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

3. **Description of the Facility:** The following information must be included:
   a. name of the facility;
   b. the facility address or, if no street number, the street and nearest cross street;
   c. Assessor's Parcel Number(s) for the facility and all associated land application areas;
   d. for each Assessor's Parcel, the total acreage; the acreage used for crops including pasture, the acreage used for application of (a) process wastewater, (b) non-hazardous, decomposable, processing solids , or (c) both; and
   e. the crop rotation, if any, within each land application area.

4. **Maps and Drawings:** One or more United States Geological Survey quadrangle maps or equivalent showing the location of the facility and all areas under the Permittee's control, whether owned, rented, or leased, to which process wastewater or non-hazardous, decomposable, processing solids may be applied. If suitable, an aerial photo with appropriate notations may be utilized. The map(s), aerial photos, and/or drawings should show the locations of all the following that exist at the land application area: surface water courses and conveyances, underground pipelines, where process water is mixed with irrigation water or discharged, drainage flows for each land application area, drainage ditches and drainage easements, drainage controls (berms, levees, etc.) for tailwater and storm water; extent of subsurface (tile) drainage systems and associated discharge points, wells and type (domestic, industrial, agricultural, or monitoring), storm water discharge points, a point locating any septic systems, all water quality sampling points, and a map legend. More than one map and drawing may be used for clarity.

5. **Salt and Pollutant Minimization:** The Salt and Pollutant Minimization component of the FSNMP should identify all contributing sources of salts and other pollutants entering into the process wastewater. It should also identify steps that will be taken to reduce the amount of salts and pollutants such as dry sweeping, screening of floor drains, use of eco-friendly sanitation products, separation of highly concentrated salt waste streams from process wastewater, etc.

6. **Nutrient Budget Calculations:** The FSNMP must include calculations showing all sources of nutrients used by the land application area and demonstrating that nutrients are applied at rates that are protective of water quality. These

calculations must be reviewed annually and updated if there are any significant changes in conditions or practices at the facility that necessitate changes in the FSNMP. These calculations may be reviewed by Regional Water Board staff during inspections. The details of the nutrient budget are discussed below in Section D.

7. **Land application practices and water quality protection:** The FSNMP must describe the methods by which process wastewater and solid non-hazardous, decomposable processor waste is applied to the land application area(s), and describes the Best Management Practices (BMPs) that will be implemented to protect surface water and groundwater.

8. **Sampling and analysis program:** The FSNMP must describe the associated sampling program including sampling locations, sampling frequency, sample collection and preservation procedures. The FSNMP must identify the analytical laboratory utilized and the analyses to be conducted for soil, soil amendments, process water, irrigation water, plant tissue, etc. If the above-listed information is in the MRP (Attachment B), the FSNMP can reference that MRP. The laboratory utilized must be certified by the California Department of Public Health, or if not certified it must be approved by the Regional Water Board staff.

D. Nutrient Budget Calculations

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

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

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

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

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

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

Nutrient application rates shall not approach a site's maximum ability to contain one or more nutrients through soil adsorption. If the nutrient budget shows that the nutrients generated by the Facility exceed the amount needed by crops in the land application area, then the Permittee must implement management practices that will prevent impacts to surface water or groundwater due to application of excess nutrients. Such practices may include obtaining access to additional land for nutrient application, or exporting the solid non-hazardous, decomposable processing waste to a permitted composting or landfill.

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

1. Soil Plant Available Nitrogen (PAN) testing or plant tissue testing has been conducted and indicates that additional nitrogen is required to obtain crop yield estimates typical for the soils and other local conditions;
2. The amount of additional nitrogen applied is based on the soil or tissue testing; and is consistent with UCCE or NRCS guidelines or written recommendations from a nutrient management specialist or Certified Crop Advisor;

3. The form, timing, and method of application facilitates timely nitrogen availability to the crop; and
4. Records are maintained documenting the need for the additional applications.

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

E. Record-Keeping and FSNMP Review

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