ATTACHMENT G

**CHLORIDE ASSESSMENT AND MANAGEMENT PLAN**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

**SAN FRANCISCO BAY REGION**

For the General Waste Discharge Requirements for

Discharges of Winery Waste to Land Within the San Francisco Bay Region

Order No. R2-2017-Xxx

1. **PURPOSE**

The purpose of the Chloride Assessment and Management Plan is two-part:

1. To determine whether the chloride concentration of the treated wastewater (effluent) discharged (at land surface or subsurface) will meet the groundwater water quality objective of 250 milligrams per liter (mg/L) at the groundwater surface.
2. To identify practices, which the Discharger shall implement, to minimize adverse impacts to groundwater from the land application of salinity found in winery process wastewater.
3. **WHEN IT IS DUE**

Dischargers that have exceeded the Numeric Action Level for chloride as listed in **Table 10** of the Order **three times** during a rolling **12-month period,** shall conduct a site-specific Chloride Assessment and Management Plan in accordance with the guidelines provided herein. The Chloride Assessment and Management Plan is **due with the quarterly monitoring report** following the exceedance of the Numeric Action Level for chloride.

1. **WHEN AND HOW IT MUST BE UPDATED**

The Chloride Assessment shall be revised by the Discharger if changes in conditions or practices at the winery require modification of the Chloride Assessment. Conditions that may require modification of the Chloride Assessment include but are not limited to, the following:

* Changes in effluent chloride concentration
* Changes in source water
* Changes in type of crop/vegetation grown
* Designation of a new land application area

Records on the timing and amounts of process wastewater applied to land shall be collected and submitted in accordance with the Monitoring and Reporting Program (Monitoring Program) associated with the Order.

1. **REQUIRED COMPONENTS**

At a minimum, the Chloride Assessment shall contain the following components:

1. **Contact Information**

The name and phone number of the:

1. Facility owner,
2. Facility operator who is responsible for implementing the Chloride Assessment (if different from the owner),
3. Developer of the Chloride Assessment, and
4. **Facility and Land Application Area Information**

The following information shall be included:

1. Name of the facility,
2. Facility address,
3. Assessor’s Parcel Number(s) for the facility location and land application area,
4. Total acreage of the land application area,
5. Soil type(s) in the discharge area. Soil type can be identified online via the University of California Davis Soil Web at <http://casoilresource.lawr.ucdavis.edu/gmap/> or the Natural Resources Conservation Service Web Soil Survey at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>, and
6. Depth to groundwater in the discharge area.
7. **Maps and Drawings**
8. One or more aerial photos or scaled map drawings showing the entire land application area. The aerial photo(s) and/or drawing(s) of the land application area should include a map legend and identify the locations of all of the following:
	1. Surface water courses, drainage ditches and drainage controls (berms, levees, etc.);
	2. Subsurface (tile) drainage systems and associated discharge points;
	3. Groundwater wells and type (domestic, industrial, agricultural, or monitoring); and
	4. Onsite wastewater treatment systems and leach fields.
9. **Current Conditions and Practices--Application**
10. Chloride concentration in the treated wastewater discharged to land.
11. Chloride concentrations in the source water that is used for any activities that contribute wastewater to the wastewater treatment systems.
12. Chloride concentrations in background ground water quality (if available).
13. Chloride loading based on effluent water quality and discharge quantity.
14. Land application method.
15. Quantity of dilution that will occur through the application of other irrigation water sources or rainfall, if applicable.
16. Method to ensure that the wastewater is evenly spread over the land.
17. Wetting and drying cycle durations that reflects the length of time that wastewater is applied to the land and the time in between applications.
18. **Current Conditions and Practices—Uptake, Dilution, and Removal**
	1. The type and area of coverage of crop(s) or vegetation being grown within the discharge area.
	2. List current salinity source reduction measures implemented at the winery. Measures that should be considered include, recycling, hauling, and product substitution such as potassium hydroxide in place of sodium hydroxide for cleaning purposes.
19. **Mass balance Calculations and Conclusions**

Conduct a Chloride mass balance that indicates the amount of chloride applied in a year in comparison to the amount taken up by the biological or physical processes of the crop-soil system. Calculate the effluent chloride concentration at the groundwater surface and evaluate whether it is meeting the Basin Plan water quality objective of 250 mg/L.

1. **Proposed Conditions and Practices**
	1. The Chloride Assessment must describe how and when process wastewater will be applied to the land application area(s).
	2. If the chloride budget demonstrates that the chloride generated by the winery exceeds the amount that is taken up or attenuated in the soil before reaching the groundwater, then the Discharger must include management practices in the Chloride Assessment that will be implemented to prevent impacts to surface water or groundwater due to application of excess chloride. Such practices may include supplemental treatment, hauling, and cleaning product substitution.
	3. Demonstrate a reduction in chloride concentration from the effluent concentration discharged to land to the concentration upon reaching the groundwater.
2. **RECORD-KEEPING AND CHLORIDE ASSESSMENT REVIEW**
3. The Discharger shall maintain records for each land application area.
4. All records must be available for Regional Water Board staff review during inspections.
5. The Discharger shall provide a list of resources and data sources that were used in the Chloride Assessment.
6. The data must be reviewed annually and updated if there are any significant changes in conditions or practices at the facility that necessitate changes in the Chloride Assessment.
7. The data and calculations may be reviewed by Regional Water Board staff, and the Regional Water Board retains the authority to require revisions and improvements to the Chloride Assessment and Management Plan.