

## The California Statewide General Order for Wineries

The General Order for wineries was adopted by the State Water Resources Control Board on **20 January 2021**. The Wine Institute worked collaboratively with State Water Board staff for over three years to describe how wineries sustainably manage process water and the financial burden the General Order will have on wineries. Kennedy Jenks provided technical support to the Wine Institute throughout this process. Based on our insider knowledge of the General Order, we have summarized the key conditions in the General Order in the following **10 points**. This article is not a comprehensive summary; instead, we have summarized highlights relevant to large and small wineries that may apply for coverage under the General Order.

### 1. Who is Required to Apply for Coverage?

- a. The State Water Board estimates that 1,480 wineries may need to file for coverage under the new General Order.
- b. At present, approximately 600 wineries have permits or permit waivers from Regional Water Quality Control Boards. Regional water boards will contact wineries with individual permits to determine when they will need to apply for coverage under the General Order.
- c. Wineries that are not required to be covered under the General Order include i) those who do not discharge to land, ii) wineries that discharge more than 15,000,000 gallons of process water per year, iii) commingled domestic wastewater and process water disposal systems, and iv) approximately 556 wineries that discharge less than the minimum permit threshold of 10,000 gallons per year.

### 2. How and When Do I Apply for Coverage?

- a. A Notice of Intent (NOI) to be covered under the General Order is submitted by the winery along with a required technical report with information specified in Attachment B of the General Order. The regional water board that serves the winery's location will respond with a Notice of Approval (NOA) for the proposed winery operations and the winery is enrolled in the General Order.

General Order Application Schedule	
<b>Wineries with WDRs:</b>	<i>Regional water boards will contact wineries and schedule their submittal</i>
<b>Wineries without WDRs:</b>	<i>NOI submittal within 3 years (January 2024); a 5-year compliance schedule may be proposed</i>
<b>New wineries:</b>	<i>NOI submittal at least 180 days before opening date, full compliance required</i>

### 3. Tier Structure

The General Order establishes 5 Tiers that wineries will fit into based on average annual process water discharge:

Tier	de Minimis Exemption	Tier 1	Tier 2	Tier 3	Tier 4
<b>Annual Process Water (Gallons)</b>	< 10,000	10,001 – 30,000	30,001 – 300,000	300,001 – 1,000,000	1,000,001 – 15,000,000

- Wineries that discharge less than 10,000 gallons of process water per year do not need to enroll under the General Order.
- The number and complexity of requirements for monitoring and reporting increase from Tier 1 to Tier 4.

**Three process water discharge categories are addressed in the General Order:** process water treatment ponds, land application of process water, and subsurface disposal systems (SDS) that consist of at least a treatment and settling tank with a drain field for discharge.

4. **Process Water Treatment Ponds.** Ponds are often not the final process water discharge point but they are regulated because there is a potential for pond seepage to impact underlying groundwater. Some wineries may be required to line their new or existing ponds depending on their tier level. The table below provides a summary of these requirements.

Tier	Existing Pond Lining Requirement	New Pond Lining Requirement
<b>Tier 1</b>	Unlined Allowed	Unlined Allowed
<b>Tier 2</b>	Unlined Allowed	Lining Required
<b>Tier 3</b>	Lining Required	Lining Required
<b>Tier 4</b>	Lining Required	Lining Required

Tier 1 dischargers may use their existing unlined ponds and build new unlined ponds provided that they comply with all other General Order requirements. Existing and new ponds at Tier 3 and 4 wineries must be lined to meet a specific hydraulic conductivity standard ( $1 \times 10^{-6}$  cm/sec) so that pond seepage limits impacts to groundwater.

Wineries in all Tiers are required to manage ponds to avoid causing nuisance conditions (i.e. odors). Other effluent limitations or discharge specifications (requirements) for Tier 2, 3, and 4 wineries include:

- a. The annual discharge flow limit stated in the Facility's NOA may not be exceeded.
- b. Annual average Fixed Dissolved Solids (FDS) concentration may not exceed the FDS concentration in source water plus 320 mg/L. If this value is exceeded, then Tier 2 and 3 wineries may (and Tier 4 wineries must) either a) prepare a Salt Control Plan or b) participate in an approved sustainability program that contains salt control measures or a regional Salt and Nutrient Management Plan.

5. **Land Application of Process Water.** Land application programs have effluent limitations and discharge specifications for all Tiers.

Discharge requirements for Tier 1 wineries are general in nature but are important because they lay out essential management practices that protect against impacts to underlying groundwater. Management of the crop and process water/stormwater/other supplemental irrigation must be done in a manner that prevents nuisance conditions including odor and pest insect breeding. Irrigation applications must be applied uniformly over the land application area to prevent runoff, erosion, and ponding. The requirements include specifications for even distribution of process water and allowing drying time between applications.

For Tiers 2, 3, and 4, effluent limitations and specifications include:

- a. The annual flow limit stated in the Facility's NOA may not be exceeded.
- b. The Biochemical Oxygen Demand (BOD) loading for each discharge cycle (the application day plus the number of days until the next irrigation) shall not exceed 100 lb/ac/d.
- c. The application of nitrogen shall not exceed the agronomic rate for the crop on the land application area.

- d. Annual average FDS concentration may not exceed the FDS concentration in source water plus 320 mg/L. If this value is exceeded, then Tier 2 and 3 wineries may (and Tier 4 wineries must) either a) complete a Salt Control Plan or b) participate in an approved sustainability program that contains salt control measures or in a regional Salt and Nutrient Management Plan.

## 6. Process Water Subsurface Disposal Systems.

Requirements for Tier 1 wineries are general in nature but are important because compliance with them minimizes the potential for groundwater impacts. The requirements include specifications for even distribution of process water and allowing drying time between applications. These management practices are often difficult to accomplish for small wineries that distribute water by gravity and may not have extra storage available.

For Tiers 2, 3, and 4, effluent limitations and discharge specifications include:

- a. The annual flow limit stated in the Facility's NOA may not be exceeded.
- b. The daily discharge flow to the SDS discharge area shall not exceed one gallon per square foot of discharge trench per day.
- c. Effluent limitations for SDS effluent prior to discharge to the subsurface disposal area include: 10 mg/L total nitrogen, 300 mg/L BOD, and 330 mg/L Total Suspended Solids (TSS). *[An alternative to the nitrogen effluent limitation was added to the General Order during the adoption hearing. A winery may install a monitoring well network to demonstrate compliance with nitrate-N limit of 10 mg/L and a total N limit of 10 mg/L in groundwater.]*
- d. Annual average FDS concentration may not exceed the FDS concentration in source water plus 320 mg/L. If this value is exceeded, then Tier 2 and 3 wineries may (and Tier 4 wineries must) either a) complete a Salt Control Plan or b) participate in an approved sustainability program that contains salt control measures or in a regional Salt and Nutrient Management Plan.
- e. If a winery exceeds the SDS total nitrogen limit of 10 mg/L, Tier 2 wineries may (and Tier 3 and 4 wineries must) submit a Nitrogen Control Plan or participate in a regional Salt and Nutrient Management Plan.

## 7. Monitoring and Reporting Requirements

Monitoring and reporting requirements increase in number, complexity and frequency between Tiers 1 and 4. For Tier 1, only winery effluent flow needs to be monitored and monthly compliance letters and annual reports need to be submitted to the regional water board.

For Tiers 2, 3, and 4, monitoring is required for the following items depending on the type of system the winery has:

- a. Source Water Monitoring: flow and water quality
- b. Winery Effluent Monitoring: flow and water quality
- c. Pond Monitoring: observations, dissolved oxygen, pH, and EC
- d. Land Application Area Monitoring: observations, flow, water quality, and loadings
- e. Subsurface Disposal Area Monitoring: observations, flow, and water quality
- f. Solids Monitoring: amount, disposal location, and constituent analysis
- g. Groundwater Monitoring: for Tier 4 Only, See #8 Below

The frequency of observations and monitoring generally increases from Tier 2 to Tier 4.

Reporting requirements for all tiers include the submission of monthly compliance letters and annual reports. Tier 4 must also submit a semi-annual report mid-year.

### 8. Groundwater Monitoring (Tier 4 Only)

Tier 4 wineries are required to either install an onsite monitoring well network to conduct groundwater monitoring, or request and justify a groundwater monitoring exemption based on site specific conditions. For pond systems with a volume of less than 1 million gallons, and land application systems with groundwater greater than 25 feet below ground surface, wineries may be eligible for an exemption from groundwater monitoring. Wineries that have SDS discharges are required to monitor groundwater; there are no exemptions.

If a Tier 4 winery's groundwater monitoring results indicate impacts to groundwater, the regional water board may require the winery to develop and implement a site-specific Nitrogen Control Plan or participate in an approved regional Salt and Nutrient Management Plan.

### 9. Potential Financial Impacts

Compliance costs for Tier 1 wineries will likely be minimal, however compliance costs for Tier 2, 3, and 4 wineries may have a wide range depending on the type and complexity of their system. Possible annual monitoring and reporting costs could range from \$6,000 - \$22,000 per year for pond and land applications systems, and from \$7,000 - \$24,000 per year for SDS systems, depending on the Tier.

These annual costs are representative of expected laboratory analysis fees and reporting costs only and do not include equipment costs or winery staff labor costs to conduct monitoring. Compliance with the General Order will also require wineries to pay 'one-time' costs that may include preparation of the NOI and technical report, purchase of sampling equipment, groundwater monitoring well installation, preparation of a salt control plan, and preparation of a nitrogen control plan. These additional one-time costs could be substantial.

### 10. How does this General Order Compare to Winery Permits in other States?

Kennedy Jenks worked with state winery associations and regulators to develop general permits for Oregon (General Permits 1400a & 1400b, May 2018), and Washington (Winery General Permit, May 2018). The table below describes differences between the winery permit programs in Oregon, Washington, and California.

State	Minimum winery wastewater discharge requiring a permit (gal/yr)	Tiers including exempt category (gal/yr)	Number of wineries
<b>California</b>	> 10,000	<10,000 10,001–30,000 30,001-300,000 300,001-1,000,000 1,000,001-15,000,000	556 exempt 1,480 need to apply for General Order coverage
<b>Washington</b>	> 53,500	< 53,500 de minimis 53,501 – 600,000 <sup>(b)</sup> >600,000	684 de minimis 267 need permit
<b>Oregon</b>	> 43,000 - 86,000 <sup>(a)</sup>	< 43,001 exempt < 82,000 gal/day <sup>(c)(d)</sup>	~ 800 wineries total 370 de minimis 80 need permit

(a) The Oregon limit is 'less than 6,000 cases per year'. The range shown is estimated for wastewater to wine ratios of 3:1 and 6:1.

(b) The two Washington flow Tiers differ by the amount of monitoring and reporting required.

(c) The Oregon General Orders only cover wineries with less than 82,000 gallons per day discharge.

- (d) Oregon General Order 1400a covers wineries that discharge to land application or evaporation basins. Order 1400b applies to processors who use mechanical, chemical, or thermal processes or those who have SDS discharges.

*This article is based on KJ's in-depth knowledge of the General Order and key items that may have the greatest impacts on wineries. The full permit is available at the Water Board's website here: [https://www.waterboards.ca.gov/water\\_issues/programs/waste\\_discharge\\_requirements/winery\\_order.html](https://www.waterboards.ca.gov/water_issues/programs/waste_discharge_requirements/winery_order.html)*

*Please contact any member of our KJ winery team in our 2021 Unified Wine & Grape Symposium Virtual Booth if you need more information about the California General Order for Wineries.*