

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2015-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR  
GOLDEN STATE VINTNERS  
CUTLER WINERY  
TULARE COUNTY

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

1. On 9 July 2014, Golden State Vintners, a California Corporation, submitted a Report of Waste Discharge (RWD) to support the discharge of process wastewater from its Winery in Tulare County. Additional information was submitted on 1 October 2014 to complete the RWD.
2. Golden State Vintners (hereafter GSV or Discharger), owns and operates the Winery that generates the waste and is responsible for compliance with these WDRs.
3. The Winery is at 38558 Road 128 in Tulare County approximately two miles south of Cutler in Section 32, Township 16 South, Range 25 East, MDB&M. The Winery and land application area occupy Assessor's Parcel Numbers (APNs) 035-170-025, 035-170-026, and 035-170-027, which includes approximately 71 acres of land as shown on Attachment A, which is attached hereto and made part of this Order by reference.
4. The Winery has been in operation since about 1936 and is currently regulated by Waste Discharge Requirements (WDRs) Order 87-114, adopted by the Central Valley Water Board on 26 June 1987. Order 87-114 allows a maximum daily discharge of up to 0.35 million gallons per day (mgd) from August to November and up to 0.1 mgd from December through July of stillage and wash water to approximately 50 acres of adjacent land owned by the Discharger.
5. Since 1987 activities at the Winery have changed. In 1996 the Winery ceased distillation activities and stopped discharging stillage waste to the land application area. In 2001, the Winery ceased grape crushing and fermentation activities. GSV acquired the Winery in 2004. Currently the Winery acts as a wine blending, storage, and packaging facility, with flows below the limits prescribed in Order 87-114.
6. Order 87-114 is out of date and no longer adequately describes the discharge or Central Valley Water Board plans and policies. Therefore, Order 87-114 will be rescinded and replaced with this Order.

### Existing Facility and Discharge

7. The Winery receives liquid wine and juice from other facilities owned by Golden State Vintners and The Wine Group, LLC. In 2014, the Winery added the production of Special Natural (SN) wines to its product line, and in the future may add wine distillation to increase the alcohol content in the wine, and/or a wine ion exchange system. The wine and juice is received in trucks and unloaded in the receiving area, then pumped to insulated holding tanks. From the holding tanks the liquid is refrigerated and cooled prior to filtration and clarification for export or packaging.
8. Source water for the Winery is provided by an on-site well (SW-2). From a sample collected on 8 April 2014, the source water is relatively good with an electrical conductivity (EC) of 690 umhos/cm, total dissolved solids (TDS) of 440 mg/L, and nitrate as nitrogen (NO<sub>3</sub>-N) of 9.8 mg/L.
9. Wastewater generated at the Winery consists of tank rinse water, tanker wash water, storm water, incidental spillage and cleaning water from the export skid and packaging plant, cooling water condensate, boiler blow down, and water softener regenerate.
10. Sanitation, boiler, and filter skid water used in the packaging plant and export skid pass through a water softener before being used. Water from the boilers is used to generate heated water for sanitizing packaging equipment and the export skid and also to warm wine in the packaging plant prior to packaging. A portion of the packaging sanitation water is recycled back to the hot water tank after use. After cleaning, wine is flushed through the pipes at the packaging plant to remove residual chemicals. The flushed wine and wash water are discharged into the wastewater collection system.
11. The RWD includes a list of the following cleaning chemicals used at the Winery with their approximate annual usage: (a) ethyl alcohol (275 gallons); (b) Evonik Peraclean 5% (6 gallons); (c) Shureclean Plus (104 gallons); (d) Cleaner QT-185 (55 gallons); (e) BCS General Cleaner (5 gallons); (f) Bristol Sterling Super XFG-4890 (260 gallons); and (g) potassium hydroxide (15 gallons). Other chemicals in use that may be present in the wastewater include sodium hydroxide, hydrochloric acid, sodium hypochlorite, and diatomaceous earth (DE).
12. Current flows based on data provided by the Discharger for the last five years, range from about 0.02 to 0.054 million gallons per day (mgd). The RWD proposes an average daily flow limit of 0.075 mgd with a maximum daily flow of 0.15 mgd to handle projected increases in Winery operations. These are below the current limits prescribed by Order 87-114.
13. Order 87-114 requires the Discharger to sample its wastewater for biochemical oxygen demand (BOD), nitrate as nitrogen (NO<sub>3</sub>-N), Total Kjeldahl Nitrogen (TKN), and total nitrogen on a monthly basis. Table 1 presents average, minimum, and maximum

wastewater concentrations for these constituents based on data collected from January 2009 through August 2014:

TABLE 1. Wastewater Quality

Constituent	Units	Wastewater Quality		
		Average	Minimum	Maximum
Biochemical Oxygen Demand (BOD)	mg/L	4,380	53	11,900
Nitrate as Nitrogen (NO <sub>3</sub> -N)	mg/L	5.1	<0.1	9.4
Total Kjeldahl Nitrogen	mg/L	12	2	53
Total Nitrogen	mg/L	18	4.2	60

14. Additional samples of the wastewater were collected by the Discharger in April 2014 and by Central Valley Water Board staff in September 2014, to further characterize the quality of the discharge. The results are presented in Table 2 below:

TABLE 2. Wastewater General Minerals and Nitrogen Forms

Constituent	Units	8 April 2014	4 September 2014
pH	s.u.	7.1	5.8
Electrical Conductivity (EC)	umhos/cm	810	1,400
Biochemical Oxygen Demand (BOD)	mg/L	2,400	4,500
Total Dissolved Solids (TDS)	mg/L	820	2,800
Fixed Dissolved Solids (FDS)	mg/L	380	1,080
Nitrate as Nitrogen (NO <sub>3</sub> -N)	mg/L	1.6	1.9
Total Kjeldahl Nitrogen (TKN)	mg/L	12	48
Total Nitrogen	mg/L	14	50
Bicarbonate	mg/L	140	280
Calcium	mg/L	67	37
Magnesium	mg/L	29	21
Sodium	mg/L	51	250
Potassium	mg/L	24	97
Chloride	mg/L	92	54
Sulfate	mg/L	46	80

15. Since the Winery is primarily used for storage and processing, the wastewater is not a typical winery waste stream that may include grape solids or tank bottoms and is not expected to show significant fluctuations due to seasonal operations.
16. Wastewater from the Winery drains to a series of ten sumps scattered throughout the site. From the sumps the wastewater is pumped to the collection system where it flows by gravity to a 900-gallon surge tank on the north end of the production area. In addition, a majority of the precipitation which falls on the paved areas at the site is collected in the various sumps and added to the waste stream.

17. From the surge tank, the wastewater is pumped into a 6-inch irrigation line and applied by flood irrigation to the land application area. The land application area is divided into wide checks (approximately 525 to 660 feet by 50 feet) each covering approximately 0.7 acres. There are three risers for each check. According to the RWD, the wastewater is applied to a depth of two to four inches during each irrigation event with a resting period of 10 to 30 days between applications.
18. Currently, GSV only applies wastewater to approximately 20 acres of land. However, there is about 50 acres of land available for wastewater application. According to the RWD, the land application area will be expanded to include the entire 50 acres, as needed, to ensure compliance with these WDRs.
19. According to the RWD, crops will be grown within the land application area to take up excess nutrients and salts from the discharge. The RWD proposes to double crop the fields with a summer crop of sudan grass and a winter crop of oat hay or similar fodder crop.
20. The water balance provided with the RWD shows that there is sufficient land to handle the discharge from the Winery along with precipitation from a 100-year wet year, and that supplemental irrigation water will be required to meet crop demand during the spring, summer, and early fall.
21. According to the RWD, winery operations will occur year round. There is minimal storage available in the sumps and tanks at the site to store wastewater during wet weather. The RWD addresses the need to continue discharging during wet weather by increasing the daily application areas to minimize the potential to cause oversaturated conditions. This Order proscribes irrigation with wastewater in a manner that would cause runoff onto adjacent properties, ponding for greater than 48 hours, application of wastewater when soils become saturated, or exceedance of agronomic application rates.

To address this issue, this Order requires the Discharger to submit a technical report to provide an appropriate plan to accommodate allowable wastewater flow and seasonal precipitation with a time schedule to provide adequate wet weather storage, if required.

22. With nitrogen concentrations between 4 and 60 mg/L, the nitrogen load to the land application area at an annual discharge of 25 million gallons would be between 17 and 250 lbs/acre/year. This is less than the annual nitrogen uptake for a double cropped field of sudan grass and winter oat hay of approximately 440 lbs/acre/year (Western Fertilizer Handbook, 8<sup>th</sup> edition).
23. As shown in Finding 14, the TDS of the discharge is higher than the EC or the FDS, indicating that the discharge has a high concentration of volatile dissolved solids. Volatile dissolved solids can be broken down and biologically treated by soil microorganisms in a well managed land application system, when wastewater is not over applied. Based on

the samples collected in April and September of 2014, the concentrations of FDS in the discharge appear to be 40 to 50 percent lower than the TDS. This is similar to the data collected from sampling at other wineries.

24. With an average BOD concentration of about 4,380 mg/L, the cycle average BOD loading rate at 0.075 mgd to the 50-acre land application area would be about 55 lbs/acre/day assuming the minimum 10 day resting period between applications proposed by the Discharger.
25. Solid waste generated at the Winery consists of spent diatomaceous earth (DE) from two filter systems, a pack press filter system, and a Velo screen filter system. Spent DE from the pack press filters is stored on a concrete pad and taken off-site for use as a soil amendment. Residual DE from the Velo screen filter is discharged into the wastewater collection system and applied to the land application area. The RWD estimates that approximately 32,000 pounds of residual DE from the Velo screen filter is discharged to the land application area on an annual basis.
26. Domestic wastewater generated at the Winery is discharged to an on-site septic system regulated by Tulare County.

#### **Site-Specific Conditions**

27. The Winery and land application area are on the east side of the San Joaquin Valley. Topography in the area is generally level with an approximate elevation between 335 and 345 feet above mean sea level.
28. Federal Emergency Management Agency (FEMA) maps show that the Winery and land application area are within Flood Zone X, areas determined to be outside of the 500-year floodplain, with less than a 0.2% annual chance of flooding.
29. United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey maps characterize approximately the top six feet of soils. Soils within the land application area are primarily Exeter loam and Seville clay. Exeter loam, which covers about 80% of the land application area is a well drained soil with a permeability of 0.2 to 0.57 inches per hour, and has an irrigated land classification unit of 3s (severe limitations due to shallow rooting depth, low moisture holding capacity, or low fertility). Seville clay, which covers about 15% of the land application area is slightly alkaline clay soil moderately well drained, with a permeability of 0.01 to 0.06 inches per hour, and has an irrigated land classification unit of 3s (severe limitations due to shallow rooting depth, low moisture holding capacity, or low fertility).
30. Climate in the Central Valley is characterized by hot dry summers and mild winters. The rainy season generally extends from November through April. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual

precipitation and pan evaporation for the area are about 12 inches and 66 inches, respectively, according to information published by the California Department of Water Resources. The maximum annual precipitation for a wet year with 100-year return period is estimated to be about 23 inches, with a 24-hour 25 year storm event of about 3.01 inches. From the California Irrigation Management System (CIMIS), the mean reference evapotranspiration rate (ET<sub>o</sub>) for the nearby CIMIS station in Lindcove is about 53 inches per year.

31. Land use in the vicinity of the site is primarily agricultural. According to the 2013 Tulare County Agricultural Commissioner land use data, crops grown within two miles of the site include alfalfa, grapes, oats, beans, kiwi, sorghum, corn, pomegranates, peaches, plums, walnuts, and citrus. Irrigation water is supplied primarily by groundwater.

### Groundwater Conditions

32. According to the Department of Water Resources Groundwater Elevation Maps (Spring 2010), first encountered groundwater in the vicinity of the site occurs between 40 and 50 feet below ground surface (bgs). Regional groundwater flow in the area is to the southwest.
33. Three monitoring wells were installed at the site in 1993. Depth-to-water in these wells has ranged from about 20 to 70 feet bgs. In August 2014, depth-to-groundwater in these wells ranged from about 65 feet bgs in up-gradient well MW-2 to 69 feet bgs in down-gradient well MW-1.
34. These monitoring wells are sampled annually for pH, EC, nitrate as nitrogen (NO<sub>3</sub>-N), and total Kjeldahl Nitrogen (TKN). Table 3 presents average groundwater concentrations for these constituents for samples collected from 2011 through 2014 in relation to their respective Maximum Contaminant Levels (MCLs).

TABLE 3. Groundwater Quality

Constituent	Unit	MW-1	MW-2	MW-3	MCLs
pH	s.u.	7.0	7.4	7.6	
EC	umhos/cm	<b>1,812</b>	<b>1,185</b>	864	900/1,600 <sup>1</sup>
Nitrate as nitrogen (NO <sub>3</sub> -N)	mg/L	<1	<b>42</b>	<b>31</b>	10 <sup>2</sup>
Total Kjeldahl Nitrogen (TKN)	mg/L	<1	<1	<1	

Concentrations shown in bold exceed their respective MCLs.

1. Recommended/Upper Secondary MCL.

2. Primary MCL.

35. Both monitoring wells MW-2 and MW-3, up-gradient and cross-gradient of the land application area, contain nitrate as nitrogen above the primary MCL of 10 mg/L. High nitrate concentrations up-gradient of the land application area is likely the result of

existing agricultural activities in the area. A check of the Geotracker GAMA database identified seven supply wells within about a mile of the site. Nitrate as nitrogen in these wells ranged from about 1 mg/L to 14 mg/L; however, details on the construction of these wells is unknown.

36. The elevated EC above the upper secondary MCL and low nitrate concentrations observed in down-gradient monitoring well MW-1 compared to monitoring wells MW-2 and MW-3 are indicative of possible organic overloading of the land application area. This is likely the result of historic discharges when the Winery's operations included grape crushing and the discharge of stillage waste. Additional information is necessary to determine the extent of groundwater degradation/pollution beneath the site.

This Order sets a cycle average BOD loading limit of 100 lbs/acre/day to reduce the potential for organic overloading of the land application area and requires the Discharger to evaluate its groundwater monitoring well network and conduct a groundwater investigation to determine the extent of groundwater degradation/pollution beneath the site.

#### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

37. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
38. The Winery and land application area lie within the Alta Hydraulic Area (551.6) of the South Valley Floor Hydrologic Unit, as depicted on interagency hydrologic maps prepared by the State Water Resources Control Board and the Department of Water Resources, revised in August 1986. Local drainage is by sheet flow to the southwest toward Cottonwood Creek and the valley floor. The beneficial uses of valley floor waters, as stated in the Basin Plan, are agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and groundwater recharge.
39. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
40. The Basin Plan encourages the reuse of wastewater and identifies crop irrigation as a reuse option where the opportunity exists to replace an existing or proposed use of fresh water with reused water.

41. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater.
42. The Basin Plan's narrative water quality objective for chemical constituents requires, at a minimum, waters designated as domestic or municipal supply to meet the Maximum Contaminant Levels (MCLs) specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
43. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
44. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
45. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references, indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700  $\mu\text{mhos/cm}$ . There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000  $\mu\text{mhos/cm}$  if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
46. The list of crops in Finding 31 is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but it is representative of current and historical agricultural practices in the area.
47. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake 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 Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes effluent salinity limits for both municipal and industrial discharges and states that effluent limits established for municipal discharges shall generally apply to industrial discharges. Limits potentially applicable to the proposed discharge, include:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. Dischargers must limit the increase in EC of a point source discharge to land to a maximum of 500 umhos/cm.
  - b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1 mg/L.
48. The Basin Plan does allow for an exception to the incremental EC increase limit for food processing industries that discharge to land, where the discharge exhibits a disproportionate increase in EC over source water due to unavoidable concentrations of organic dissolved solids, provided the Discharger implements best practicable treatment or control (BPTC) to minimize the salinity of the discharge and beneficial uses are protected.
49. As discussed in Findings 14 and 23, sampling for EC, TDS, and FDS in 2014 indicates the discharge exhibits a disproportionate increase in EC due to concentrations of organic dissolved solids similar to that observed at other wineries. Thus, the discharge is eligible for the Basin Plan incremental EC exemption. Given this, it is not appropriate to generally apply the 1,000 umhos/cm EC limit cap to this industrial discharge.

This Order requires effluent monitoring for EC, TDS, and FDS to ensure the exception eligibility continues, and requires the Discharger to prepare and implement a Salinity Control Plan to minimize the salinity of its discharge to the extent practicable.

50. Many surface waters and local groundwater supplies have been degraded with salt. In some areas, the high salinity is naturally occurring, but in many areas it is due to the acts of man. In 2006, the Central Valley Water Board, the State Water Board, and stakeholders began a joint effort to address salinity and nitrate problems in the region and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. Until the program culminates in Basin Plan amendments that address the region-wide salinity issues, it is not reasonable to require dischargers to take extraordinary measures to eliminate salt from wastes discharged to land. However, the Board expects that all regulated dischargers will make a concerted effort to reduce salinity through source control, containment, and conventional treatment to the maximum practical extent.

### **Other Considerations**

51. Excessive application of high organic strength wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater with nitrogen species and metals, as discussed below. Such

groundwater degradation can be prevented or minimized through implementation of best management practices which include planting crops to take up plant nutrients and maximizing oxidation of BOD to prevent nuisance conditions.

52. It is reasonable to expect some attenuation of various waste constituents that percolate below the root zone within the vadose (unsaturated) zone. Specifically, excess nitrogen can be mineralized and denitrified by soil microorganisms, organic constituents (measured as both BOD and volatile dissolved solids) can be oxidized, and the cation exchange capacity of the soil may immobilize some salinity constituents.
53. With regard to BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are naturally present in the soil as relatively insoluble (oxidized) forms to more soluble reduced forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.
54. Typically, irrigation with high strength wastewater results in high BOD loading on the day of application. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or leaching of metals can vary significantly depending on soil conditions and operation of the land application system.
55. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency, cites BOD loading rates in the range of 36 to 600 lb/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.
56. The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:

- a. Risk Category 1: (less than 50 lb/ac/day; depth to groundwater greater than 5 feet) - indistinguishable from good farming operations with good distribution important.
- b. Risk Category 2: (less than 100 lb/ac/day; depth to groundwater greater than 5 feet) - minimal risk of unreasonable groundwater degradation with good distribution more important.
- c. Risk Category 3: (greater than 100 lb/ac/day; depth to groundwater greater than 2 feet) - requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils.

57. Although it has not been subject to a scientific peer review process, the *Manual of Good Practice* provides science-based guidance for BOD loading rates that, if fully implemented, may be considered management practices to prevent groundwater degradation due to reduced metals.
58. This Order sets a cycle average BOD loading limit of 100 lb/acre/day for the land application area, and requires the Discharger to prepare a Wastewater and Nutrient Management Plan to address BOD, salinity, and nutrient loading rates to the land application area.

### **Antidegradation Analysis**

59. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The discharger employs best practicable treatment or control (BPTC) to minimize degradation; and
  - d. The degradation is consistent with the maximum benefit to the people of the State.

60. Constituents of concern in the discharge (those with the greatest potential to affect beneficial uses of receiving water) include organics, nitrogen, and salts. However, the discharge is not expected to cause groundwater to exceed water quality objectives because:

- a. For organics, to minimize the potential for reducing and/or nuisance conditions, this Order sets a cycle average BOD loading limit of 100 lbs/acre/day, requires the Discharger to cease discharging to the land application areas in the event soils become saturated, and requires weekly monitoring of the land application area to check for ponding and/or nuisance conditions.

With the conditions stipulated in this Order, and depth to groundwater, the discharge is not expected to cause nuisance conditions or unreasonably degrade groundwater with constituents related to organic overloading.

- b. For nitrogen, most of the nitrogen in the process wastewater is present as TKN, which can mineralize and be converted to nitrate (with some loss via ammonia volatilization). Nitrate in groundwater, up-gradient of the land application area already exceeds the primary MCL of 10 mg/L. As discussed in Finding 22, the estimated nitrogen load to the land application areas at 25 million gallons would be between 17 and 250 lbs/acre/year, which is less than the nitrogen requirement for a double cropped field of sudan grass and winter oat hay.

With nitrogen uptake by crops, nitrification and denitrification in soils, and depth to groundwater beneath the site, the discharge is not expected to contribute to groundwater degradation in excess of the Primary MCL for nitrate as nitrogen of 10 mg/L. This Order includes a Provision requiring the Discharger to submit a Wastewater and Nutrient Management Plan to ensure application at agronomic rates.

- c. For salinity, as discussed in Finding 14, the EC and TDS of the discharge is between 810 and 1,400 umhos/cm, and 820 and 2,800 mg/L, respectively. The TDS of the discharge is composed of both volatile and fixed dissolved solids. As discussed in Finding 23, a large portion of the TDS in the discharge is in volatile form, which can be broken down and biologically treated by soil microorganisms in the soil. In addition, a portion of the fixed dissolved solids will bind to soil and can be reduced by nutrient uptake by crops primarily calcium, magnesium, nitrates, phosphorus, and potassium.

Groundwater down-gradient of the land application area has an EC of about 1,800 umhos/cm, which exceeds the upper secondary MCL of 1,600 umhos/cm. This is likely the result of historic discharges when the Winery's operations included grape crushing and stillage discharges. With the lower flows allowed by this Order, a cycle average BOD loading limit of 100 lbs/acre/day to reduce the organic loading on the land application area, the requirement for the discharge to be at agronomic rates for nutrient and hydraulic loading, and growing crops to take up excess nutrients and salts, the discharge is not expected to further degrade groundwater for salinity. In addition, this Order includes a Provision requiring the Discharger to

submit a Salinity Control Plan to evaluate and implement measures to control the salinity of its discharge to the extent practicable.

### **Treatment and Control Practices**

61. The Discharger provides or will provide, as required by this Order treatment and control of the discharge that incorporates:
  - a. Reuse of wastewater for irrigation of crops at agronomic rates;
  - b. A cycle average BOD loading limit of 100 lbs/acre/day;
  - c. Resting periods between wastewater applications;
  - d. Hydraulic loading rates that preclude standing water in the land application area;
  - e. Proper handling and off-site disposal of solids;
  - f. Groundwater monitoring to monitor the impact of the discharge on first encountered groundwater; and
  - g. Preparation of a Salinity Control Plan and Wastewater and Nutrient Management Plan.

### **Antidegradation Conclusions**

62. This Order establishes terms and conditions to ensure that the discharge does not degrade water quality below the highest level prescribed in state and regional policies.
63. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.
64. The treatment and pollution controls prescribed by this Order represent the best practicable treatment or control (BPTC) for the discharge.
65. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State. The Discharger aids in the economic prosperity of the region by direct employment and provides a tax base for local and state governments. Provided the discharge complies with State and Central Valley Water Board plans and policies, there is sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order. In addition, the reuse of process wastewater for irrigation in place of fresh water is of further benefit to people of the State.

66. Based on the foregoing, this Order is consistent with the Antidegradation Policy since; (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses, (b) the Discharger has implemented and will continue to implement BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to people of the State.

### **Other Regulatory Considerations**

67. The Winery has been in operation since about 1936. Waste discharge requirements were first adopted for this site in February 1976. All wastewater management systems and land application areas have been installed and are currently in use at the Winery. This Order places additional requirements on the continued operation of the Winery in order to ensure the protection of waters of the State. The issuance of this Order is therefore exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with California Code of Regulations, Title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.
68. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2C as defined below:
- a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated or cause nuisance."
  - b. Category C complexity, defined as: "Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 of the Water Code not included in Category A or Category B... Included are dischargers having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal."
69. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater. Title 27, section 20090 states in pertinent part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

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(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan; and
- (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

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70. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
- a. The discharge to the land application area is exempt pursuant to Title 27, section 20090(b) because:
    - i. The Central Valley Water Board is issuing WDRs.
    - ii. The discharge is in compliance with the Basin Plan, and;
    - iii. The treated effluent discharged to the land application areas does not need to be managed as hazardous waste.
71. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. A new General Permit for industrial storm water discharges, Order 2014-0057-DWQ (NPDES General Permit CAS000001) was adopted on 1 April 2014 and will become effective on 1 July 2015. Order 2014-0057-DWQ requires all applicable industrial dischargers to apply for coverage under the new General Order by the effective date. However, all storm water at the Winery is captured and co-mingled with wastewater before being discharged to the land application area in accordance with these WDRs, which prohibits the discharge from leaving the site and entering waters of the United States. Therefore, the Discharger is not required to obtain coverage under the new NPDES General Permit.
72. Water Code section 13267(b) states:
- 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 ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained

from the reports. In requiring those 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.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2015-XXXX are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

73. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
74. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
75. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

### **Public Notice**

76. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
77. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
78. All comments pertaining to the discharge were heard and considered in a public hearing.

**IT IS HEREBY ORDERED** that Waste Discharge Requirements Order 87-114 is rescinded and that Golden State Vintners, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

### **A. Discharge Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
4. Discharge of waste at a location or in a manner different from that described in the RWD and Findings herein, is prohibited.
5. Discharge of domestic wastewater to the process wastewater treatment system or land application areas is prohibited.

### **B. Flow Limitations**

1. The discharge shall not exceed a monthly average daily discharge flow of 0.075 mgd or an annual flow of 25 million gallons per year. [Monitored at EFF-001]

### **C. Discharge Specifications**

1. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

6. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or stored and discharged at an intensity that creates or threatens to create nuisance conditions.
7. Irrigation pipelines, sprinklers, and/or drip irrigation lines used to convey wastewater to the land application areas shall be flushed with fresh water after application of wastewater, as needed, to ensure compliance with Discharge Specification C.6.
8. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
  - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
  - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

#### **D. Land Application Area Specifications**

1. The Discharger shall grow crops within the land application areas. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake of water and nutrients.
2. The cycle average BOD loading rate shall not exceed 100 lbs/acre/day. The cycle average BOD loading rate shall be calculated as determined by the method described in the attached Monitoring and Reporting Program.
3. The pH of the discharge shall not exceed the buffering capacity of the soil.
4. The discharge shall be distributed uniformly on adequate acreage within the land application area to preclude the creation of nuisance conditions or unreasonable degradation of groundwater.
5. Hydraulic loading of wastewater and irrigation water to the land application area shall be at reasonable agronomic rates.

6. Application of waste constituents to the land application area shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering crop, soil, climate, and irrigation management system. The annual nutritive loading of the land application area, including the nutritive value of organic and chemical fertilizers, and of the wastewater shall not exceed the annual crop demand.
7. The Discharger shall not discharge process wastewater to the land application area when soils are saturated.
8. Land application of wastewater shall be managed to minimize erosion.
9. The land application area shall be managed to prevent breeding of mosquitoes. In particular:
  - a. There shall be no standing water 48 hours after irrigation ceases;
  - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
10. The land application area shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
11. Any runoff of wastewater or irrigation water shall be confined to the land application area and shall not enter any surface water drainage courses or storm water drainage systems.

#### **E. Solids Disposal Specifications**

Solids as used in this document, means the residual solids including diatomaceous earth, removed from wastewater and tanks.

1. Any handling and storage of residual solids shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
2. If removed from the site, residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2. Removal for reuse as animal feed, or land disposal at facilities (i.e., landfills, composting facilities, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water board or as proposed by the Discharger and approved by the Executive Officer will satisfy this specification.

3. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

#### **F. Groundwater Limitations**

Release of waste constituents associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality for the specified constituents, whichever is greater:

1. Nitrate as nitrogen of 10 mg/L.
2. For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein.

#### **G. Provisions**

1. The Discharger shall comply with Monitoring and Reporting Program (MRP) R5-2015-XXXX, which is hereby incorporated into and made part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
2. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
3. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
4. A copy of this Order, including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
5. In the event of any change in control or ownership of the facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
6. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall

comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

7. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing 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 revision or rescission of this Order.
9. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the following provisions by the due dates specified.
10. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

11. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
12. **Groundwater Investigation:** The Discharger shall evaluate its groundwater monitoring well network to monitor for changes in groundwater quality associated with its operations. As part of this Provision, the Discharger shall submit a Work Plan with proposed time schedule, not to exceed two years, to evaluate the groundwater degradation/pollution beneath its land application area. The Work Plan shall also address the installation of any additional monitoring wells, if required.

The Work Plan shall satisfy the information needs specified in the monitoring well installation section of Attachment B, *Standard Monitoring Well Provisions for Waste Discharge Requirements*. The monitoring wells shall comply with appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981), and any more stringent standards adopted by local agencies pursuant to Water Code section 13801.

The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:

	<u>Task</u>	<u>Compliance Date</u>
a.	Submit Work Plan and time schedule for groundwater investigation, and monitoring well installation, if required by the Executive Officer.	<180 days> following adoption of this Order
b.	Implement the Work Plan.	<60 days> following approval of the Work Plan
c.	Submit technical report describing the results of the groundwater investigation.	<2 years> following approval of the Work Plan

13. **By <6 months following adoption of the Order>**, the Discharger shall submit a Salinity Control Plan, with salinity source reduction goals and an implementation schedule for Executive Officer approval. The control plan shall identify existing salinity control measures as well as any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include; (a) estimates of load reductions that may be obtained, and (b) provide a description of the tasks, cost, and time required to investigate and implement various elements in the Salinity Control Plan.
14. **By <9 months following adoption of the Order>**, the Discharger shall submit a Wastewater and Nutrient Management Plan for Executive Officer approval. At a

minimum, the Plan must include; (a) procedures for monitoring Winery operations and discharge, (b) measures to ensure even application of wastewater, and (c) an action plan to deal with objectionable odors and/or nuisance conditions. The Plan should also include supporting data and calculations for monthly and annual water and nutrient balances, and management practices that will ensure wastewater, irrigation water, and fertilizers are applied at agronomic rates to the land application area.

15. **By <1 year following adoption of the Order>** the Discharger shall submit a technical report containing the results of a study evaluating the need to incorporate wastewater storage and/or implement other structural or operational measures into its treatment and disposal system design to ensure continuous compliance with this Order.

If the study results indicate that additional storage is necessary, the technical report shall include a work plan and time schedule to design and construct the necessary storage capacity. Wastewater storage shall be designed and constructed to preclude groundwater degradation. If ponds will be used to provide the necessary storage, the work plan shall include the following; (a) design calculations demonstrating adequate containment to handle permitted flows and a seasonal precipitation with a return period of 100 years, and that the pond liner will be protective of groundwater quality; (b) details on the pond liner and leachate collection and removal system (if applicable); and (c) a construction quality assurance plan describing testing and observations needed to document construction of the pond in accordance with the design criteria.

Upon written acceptance of the work plan by the Executive Officer, the Discharger shall begin construction to be completed by the date in the approved time schedule not to exceed three years following adoption of this Order. The Discharger shall submit a post-construction report within 30-days of completion.

16. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other

enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality)

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on \_\_\_\_\_.

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PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Site Location Map
- B Standard Monitoring Well Provisions for Waste Discharge Requirements

Monitoring and Reporting Program R5-2015-XXXX  
Information Sheet  
Standard Provisions (1 March 1991)