

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-0069

FOR

SAN JOAQUIN WINE COMPANY, INC.  
WINERY  
MADERA COUNTY

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

1. The San Joaquin Wine Company, Inc., a California corporation, (hereafter Discharger) owns and operates a Winery at 21801 Avenue 16 in Madera County, Assessor's Parcel Number 33-060-013, in Section 7, T11S, R17E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order.
2. The Winery occupies a portion of an existing on-site structure. Stellar Produce, Inc. (a tenant), occupies the remaining portion of the structure where it operates a dry pack and cold storage facility for fresh fruits and produce. There is no discharge associated with the packing operations.
3. Discharges from the Winery were previously waived under Resolution R5-2003-0106, *Waiver of Waste Discharge Requirements for Small Food Processors, Including Wineries, Within the Central Valley Region* (Waiver).
4. In June 2009, the Discharger submitted a Report of Waste Discharge (RWD) to expand its operations in excess of the limits imposed by the Waiver. The higher discharge flow rates require individual Waste Discharge Requirements (WDRs). The RWD proposed an average daily flow of 25,000 gallons per day (gpd) and an annual discharge of up to six million gallons.

**Existing Plant and Discharge**

5. The Winery accepts grapes from local growers. The grapes are brought in and pressed to remove the juice. The juice is then placed in stainless steel tanks and barrels, where it is fermented and filtered to produce various blends of red or white wines. After the fermentation is complete, the wine is bottled on-site for distribution and sale. No distillation occurs at the Winery.
6. The Winery operates year round, but the primary period of operation is the harvest or crush season that extends from mid-August through October. Typically from October through March, the wines are transferred from tanks to barrels and back again for bottling. Beginning in December and continuing through April, the wines are bottled. Starting in May, the tanks and barrels are washed and cleaned prior to the next season's harvest.
7. Source water for the Winery is provided by an on-site supply well. A sample collected from the supply well in 2009 reported an EC of 650 umhos/cm, a TDS of 390 mg/L, and nitrate as nitrogen of 7.9 mg/L.
8. In 2012, the Winery crushed approximately 500 tons of grapes and generated about 1.1 million gallons of wastewater for an average of about 3,000 gpd. At full production, the Discharger

estimates that the Winery will crush up to 5,000 tons of grapes and generate approximately six million gallons of wastewater per year for an average of 16,000 gpd.

9. Wastewater consists primarily of wash water generated from washing of various tanks, barrels, bottles, and filters, wash down of surface areas around the grape presses and production areas, and cooling water blowdown. The RWD estimates that the cooling water discharges will be minor, accounting for less than 100 gpd.
10. Tanks and barrels are cleaned and washed using a high-pressure spray. Cleaning chemicals used at the Winery include citric acid, tri-sodium phosphate (TSP), and sodium carbonate peroxyhydrate. Other chemicals that are added to the wine and might be present in the wastewater include powdered sulfur, sulfur dioxide gas, and cream of tartar.
11. Wastewater generated at the Winery is collected in floor drains and diverted to the Winery sump. From the sump the wastewater is pumped through a parabolic screen and stored in two aboveground tanks with a combined capacity of 25,000 gallons. When the aboveground tanks are nearly full, the wastewater is pumped into an irrigation standpipe and blended with irrigation water for irrigation of crops.
12. Wastewater is applied via furrow irrigation to crops on approximately 32 acres of farmland (hereafter Reuse Area) owned by the Discharger. Approximately 19.5-acres are planted with apricot trees. The remaining 12.7-acres is a grape vineyard.
13. Solids greater than 60 microns are screened out of the wastewater prior to discharge. Screenings and other residual solids generated at the Winery include pomace (grape pulp and skins), grape stems, leaves, and spent diatomaceous earth. According to Mr. Steve Schafer, a principal owner of the San Joaquin Wine Company, Inc., during the crush season these solids are collected and stockpiled along the first row of grape vines adjacent to the Winery structure. After the crush, the solids are collected and removed from the site where they are mixed in with other green waste from neighboring farmland owned by Mr. Schafer. The solids are then spread on farmland, including the Reuse Area, as a soil amendment. The annual volume of solids stockpiled on-site is estimated at less than 500 cubic yards, and as such is exempt from permitting per requirements of CCR, Title 14, section 17855(a)(4).

This Order includes a Provision that requires the Discharger to submit and implement a Solids Management Plan that describes specific measures that will be implemented to ensure that the temporary storage of solids from the Winery shall not cause or contribute to nuisance conditions or groundwater degradation.

14. Lees and other sediment collected during wine filtration are stored in bins within the cold storage facility until they are sold and hauled off-site.
15. The Winery and Stellar Produce, comprise about 5 acres of paved and roofed areas. Storm water from these areas is routed into area drains and discharged into the irrigation line and blended with process wastewater and irrigation water for irrigation of crops. The Discharger is not required to obtain coverage under the National Pollutant Discharge Elimination System Industrial Storm Water permit since all storm water runoff at the Winery is reportedly retained on-site and does not discharge into a water of the U.S.

### Loading Estimates

16. As the Winery was previously regulated under the Waiver, there is no analytical data to estimate potential loading characteristics of the discharge. Central Valley Water Board staff used standard data from similar small wineries, as well as data from the Waiver, to establish wastewater characteristics for the discharge. General wastewater characteristics for winery wastewater are presented below:  
  
Biochemical Oxygen Demand (BOD) = 300 to 12,000 milligrams per liter (mg/L),  
Total dissolved solids (TDS) = 80 to 3,000 mg/L; and  
Total nitrogen (TN) = 1 to 50 mg/L
17. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone. Typically, irrigation with high strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals naturally present in the soils as relatively insoluble (oxidized) forms to more soluble (reduced) forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If reducing conditions do not reverse as the percolate travels 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.
18. 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.
19. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency (USEPA Publication 625/3-77-0007), cites BOD loading rates for irrigation purposes in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that 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 loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions that are prevalent throughout the region.
20. With an average flow rate of 25,000 gpd and BOD concentrations ranging from 300 to 12,000 mg/L, cycle average BOD loading to the 32 acre Reuse Area will be between 1.9 and 83 lbs/acre/day. This is within the range cited by the USEPA *Pollution Abatement in the Fruit and Vegetable Industry* to prevent nuisance conditions. With implementation of best management practices, including 3- to 7-day resting periods, cessation of discharge if soils

become saturated, and daily monitoring, the discharge is not expected to cause reducing and/or nuisance conditions.

21. With a nitrogen concentration of between 1 and 50 mg/L, the annual nitrogen load to the Reuse Area with an annual discharge of six million gallons per year will be between 1.5 and 78 lbs/acre/year. This is less than the annual nitrogen requirements for apricots and grape vines of about 200 and 125 lbs/acre/year (Western Fertilizer Handbook, 9th edition), respectively.

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

22. The Winery and Reuse Area are on the east side of the San Joaquin Valley. The site is in a rural area surrounded by farmland. The topography of the site and surrounding area is generally level with an approximate elevation of 225 to 230 feet above mean sea level. Regional surface drainage is to the west-southwest toward the Fresno River, which is approximately ½ mile south and west of the site.
23. Federal Emergency Management Agency (FEMA) maps show that the Winery and Reuse Area are within Flood Zone A0, subject to potential shallow flooding by a 100-year flood to depths between 1 and 3 feet. Estimated flood depth in the vicinity of the Winery is about 1-foot. Facility perimeter features including raised roadways and berms, were designed to protect from floods of up to 1-foot depths.
24. United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey maps characterize approximately the top six feet of soil. Soils within the Reuse Area are primarily Lewis loam, Pachappa fine sandy loam, and Visalia fine sandy loam. These soils are slightly saline-alkali, and moderately well drained, with hydraulic conductivities between 0.5 and 2 inches per hour.
25. The Winery and Reuse Area are in an arid climate 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. Based on publications from the Department of Water Resources and the Western Regional Climate Center, the average annual rainfall for the area is about 11.3 inches, with a 100-year-return-period wet year rainfall of about 22 inches. From the California Irrigation Management System (CIMIS) the mean reference evapotranspiration rate (ET<sub>o</sub>) for the Madera station is about 52.68 inches per year.
26. Land use in the vicinity of the Winery and Reuse Area is primarily agricultural, with some rural residences. The Madera Golf Course and Municipal Airport are approximately 2 miles east of the site. According to the 2001 land use survey from the Department of Water Resources, primary crops grown in the area includes grapes, and orchard crops, such as almonds, apricots, nectarines, peaches, plums, and olives.
27. Domestic wastewater generated at the site is discharged to an on-site septic tank/leachfield system regulated by Madera County.

### **Groundwater Considerations**

28. The Winery does not have a groundwater monitoring well network at this time. However, the Winery is on the eastern side of the San Joaquin Valley where groundwater is expected to be of good quality. The site sits on the eastern edge of the Corcoran Clay, which is encountered at about 200 feet below grade in this area. Well logs for the area indicated that soil down to 200 feet consists primarily of sands with intermittent layers of fine grained sands, silts, and clay lenses.
29. Sources of recharge in the area include: precipitation, percolation of wastewater and irrigation water, and snow melt from the nearby Sierra Nevada.
30. According to Department of Water Resources Groundwater Elevation Maps (Spring 2010), first-encountered groundwater beneath the Winery and Reuse Area occurs in an unconfined aquifer at about 160 to 170 feet below ground surface (bgs), and flows to the west-northwest.
31. Shallow groundwater monitoring data for the City of Madera's Wastewater Treatment Facility, approximately 3 miles up-gradient of the site, reports background groundwater quality as relatively good. Monitoring wells north of this facility report EC and TDS levels of 400 to 600 umhos/cm and 320 to 500 mg/L, respectively, with nitrate as nitrogen ranging from 5.2 to 11 mg/L.
32. The California Department of Water Resources and the United States Geological Survey publish information about groundwater quality. Data that is pertinent to characterizing first-encountered groundwater is limited due to the wide variability in the screened interval of the wells, sampling dates, and constituents monitored. Samples from two up-gradient and two down- or cross-gradient wells collected in the 1960s (screened above 200 feet bgs) had EC of less than 800 umhos/cm, TDS of less than 500 mg/L, and nitrate as nitrogen from 1 to 8.4 mg/L.
33. The Discharger will not be required to conduct groundwater monitoring at this time. This Order requires wastewater effluent monitoring and loading calculations. Should constituent concentrations and loadings exceed those described in this Order, the monitoring and reporting program will be modified to require a groundwater monitoring evaluation work plan to evaluate any potential impacts from the discharge.

### **Basin Plan, Beneficial Uses, and Water Quality Objectives**

34. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4<sup>th</sup> Edition, revised October 2011* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board. In accordance with Water Code section 13263(a), these requirements implement the Basin Plan.
35. The Winery and Reuse Area lie within the San Joaquin Valley Floor Basin, specifically the Madera Hydrologic Area (545.2), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in 1986. Local drainage is to the Fresno River, a tributary of the San Joaquin River. The Basin Plan designates beneficial uses for the San Joaquin River as: municipal and domestic supply, agricultural supply, industrial process supply, contact and

non-contact recreation, warm fresh water habitat, migration of warm and cold water fish, spawning for warm and cold water fish, and wildlife habitat.

36. The Basin Plan designates the beneficial uses of groundwater as municipal and domestic supply (MUN), agricultural supply (AGR), industrial process supply (PRO), and industrial service supply (IND).
37. 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 recycled water.
38. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.
39. The Basin Plan's numeric water quality objective for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.
40. The Basin Plan's narrative water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic and municipal supply to meet the State drinking water maximum contaminant levels (MCLs) specified in Title 22, California Code of Regulations (CCR). 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 n concentrations that adversely affect beneficial uses.
41. 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.
42. 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.
43. 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 irrigating with water having an EC less than 700 umhos/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 umhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

### Antidegradation Analysis

44. State Water Board Resolution No. 68-16, the *Policy with Respect to Maintaining High Quality Water of the State* (the "Antidegradation Policy"), prohibits the Board from permitting the degradation of groundwater unless it has been shown that:
- 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;
  - The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - The Discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and
  - The degradation is consistent with the maximum benefit to the people of the State.
45. Constituents of concern in the discharge (those with the greatest potential to affect beneficial uses of receiving water) include organics, nutrients, and salts. However, the discharge is not expected to cause groundwater to exceed water quality objectives because:
- For organics, using the estimated effluent concentrations for BOD of 300 to 12,000 mg/L, an assumed 3-day cycle average BOD loading to the Reuse Area at the proposed flow of 25,000 gpd will be between 1.9 and 83 lbs/acre/day.  
  
To minimize the potential for reducing and/or nuisance conditions, this Order sets a BOD loading limit for the Reuse Area, requires cessation of discharge in the event soils become saturated, and requires the Discharger to prepare a Wastewater and Nutrient Management Plan. With the conditions stipulated in this Order and best management practices implemented by the Discharger, such as blending with fresh irrigation water, and resting periods of 3 to 7 days between applications, the discharge is not expected to cause nuisance conditions, or groundwater degradation due to organic loading.
  - For nitrogen, using the maximum estimated effluent concentration for nitrogen of 50 mg/L, the nitrogen load to the Reuse Area with a discharge of up to six million gallons per year will be about 78 lbs/acre/year. This is below the nitrogen requirements for apricots and grapes grown within the Reuse Area. With careful management and tracking required by this Order of the application of wastewater and any additional fertilizers, the discharge is not expected to cause groundwater degradation for nitrates.
  - For salinity in general, food processing wastewater may contain elevated concentrations of TDS resulting from the fruit and vegetable products or materials used for production. Typically, a percentage of the TDS is organic, which will generally decompose into its component elements and be utilized by plants and microorganisms within the soil. In contrast, the inorganic or fixed dissolved solids, is that portion of the TDS, which consists of inorganic constituents which can accumulate in the soil. Excessive salt is then leached to groundwater where it can degrade groundwater quality.

From sampling done at other wineries, the volatile portion can make up almost 50% of the dissolved solids in the discharge. Taking into account that 50% of the dissolved solids may be volatile dissolved solids, the estimated concentration of fixed dissolved solids (FDS) in the discharge will be between 390 mg/L (TDS of source water) and 1,500 mg/L. With a FDS concentration of between 390 and 1,500 mg/L, the annual salt load to the Reuse Area with a discharge of up to six million gallons per year will be between 600 and 2,400 lbs/acre/year. A significant portion of the inorganic or FDS in the discharge includes nutrients essential for plant growth. Growing and harvesting crops provides a means to remove some of these constituents, particularly calcium, magnesium, potassium, and phosphorus.

- d. The discharge is not expected to cause groundwater to exceed water quality objectives for salinity or to adversely affect beneficial uses since: (1) prior to discharge, process wastewater is stored in aboveground tanks precluding direct discharges to groundwater, (2) the applied wastewater will account for less than 15% of the irrigation demand, meaning any percolating water will be diluted with better quality irrigation water, (3) a portion of the inorganic fraction of the wastewater consists of constituents beneficial for plant growth including potassium, calcium, magnesium, and phosphorus, which will be taken up by crops further reducing the salt load to the Reuse Area, and (4) as water percolates over the 160 feet to groundwater many salinity constituents will be transformed/fixed within the soil column.
- e. To ensure the ongoing quality of the discharge with respect to salinity, this Order includes effluent monitoring for salinity constituents and loading rates and requires the Discharger to prepare and implement a Salinity Control Plan to minimize the salinity of the discharge to the extent feasible.

#### **Treatment and Control Practices**

- 46. The Discharger provides, or will provide as required by this Order, treatment and control of the discharge that incorporates:
  - a. Screening of solids from the waste stream;
  - b. Storage of effluent in aboveground tanks;
  - c. A cycle average BOD loading rate of 100 lbs/acre/day;
  - d. Application of wastewater at rates that will not allow wastewater to stand for more than 48 hours;
  - e. At least daily inspection of the Reuse Area during times of discharge;
  - f. Preparation of a Salinity Control Plan and a Wastewater and Nutrient Management Plan; and
  - g. Appropriate solids disposal practices.

These Treatment and Control Practices are reflective of BPTC of the discharge.

### **Antidegradation Conclusions**

47. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.
48. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and, therefore, sufficient reason exists to accommodate growth and limited groundwater degradation around the Winery and Reuse Areas, provided that the terms of the Basin Plan are met. Based on the available data, the discharge is not anticipated to cause groundwater degradation for nitrates or by-products due to organic loading. This Order, does authorize some limited potential degradation of groundwater for salinity, but the degradation is not anticipated to result in water quality less than water quality objectives or unreasonably affect beneficial uses.
49. This Order is consistent with the Antidegradation Policy since: (a) the Discharger has implemented BPTC to minimize degradation, (b) any limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to people of the State.

### **CEQA**

50. On 20 February 2007, the Madera County Planning Department, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 12000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended) adopted a Mitigated Negative Declaration in conjunction with a Conditional Use Permit (CUP #2006-13) for operation of the existing packing house with expansion of the Winery including discharge of winery wastewater as irrigation on adjacent farmland.
51. Central Valley Water Board staff reviewed the Mitigated Negative Declaration and agreed with the conclusion that the expansion and discharge as proposed would have a less than significant effect on water quality.
52. This Order includes specific conditions intended to protect water quality, including, but not limited to:
  - a. Flow Limitation B.1, which sets an average daily flow limit and a maximum annual flow limit for discharges to the Reuse Area.
  - b. Discharge Specification C.2, which stipulates waste constituents cannot be released or discharged in a concentration or mass that causes violation of this Order's Groundwater Limitations.
  - c. Provision G.11, which requires the Discharger to prepare and implement a Salinity Control Plan.
  - d. Provisions G.12 and G.13, which require the Discharger to prepare and implement a Wastewater and Nutrient Management Plan and a Solids Management Plan.

### **Designated Waste and Title 27**

53. California Code of Regulations, Title 27 (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to a provision that exempts wastewater under specific conditions. This exemption, found at Title 27, section 20090, is described below:
- (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 regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
    - (2) The discharge is in compliance with 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.
54. The discharge authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:
- a. The Central Valley Water Board is issuing WDRs.
  - b. The discharge is in compliance with the Basin Plan, and;
  - c. The treated effluent discharged to the Reuse Area does not need to be managed as hazardous waste.

### **Other Regulatory Considerations**

55. The annual fee for the discharge is based on a Threat to Water Quality rating of 2 and Complexity of B (CCR, Title 23, § 2200.). The Threat rating is based on the potential of the discharge to degrade water quality without violating water quality objectives, or cause a minor impairment of designated beneficial uses. The Complexity rating is based on the use of screens, storage, blending, and reuse of the wastewater, which are forms of physical and biological treatment that add complexity to staff assessment.

### **General Findings**

56. 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.
57. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.
58. Water Code section 13267(b) states that:

In conducting an investigation...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 regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring these reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

59. The technical reports required by this Order and monitoring reports required by the attached Monitoring and Reporting Program (MRP) R5-2013-0069 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.
60. All the above and the supplemental information and details in the attached Information Sheet, which is a part of this Order, were considered in establishing the conditions of discharge in this Order.

#### **Public Notice**

61. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
62. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that, pursuant to sections 13263 and 13267 of the Water Code, the San Joaquin Wine Company, Inc., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

#### **A. Prohibitions**

1. Discharge of waste, including storm water containing waste, to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991, is prohibited.
3. Discharge of waste classified as '*hazardous*', as defined in Title 23, California Code of Regulations, section 2510 et seq., is prohibited. Discharge of waste classified as '*designated*', as defined in Water Code section 13173, is prohibited.
4. Discharge of wastewater in a manner or location other than that described herein or in the Report of Waste Discharge is prohibited.

5. Discharge of any ion exchange or water softening regeneration brine into the wastewater system is prohibited.
6. Discharge of process wastewater to the domestic wastewater treatment system is prohibited.

**B. Flow Limitations**

1. The discharge shall not exceed a monthly average daily discharge flow of 25,000 gallons per day (gpd) or an annual flow of six million gallons per year. [Monitored at EFF-001]

**C. Discharge Specifications**

1. The pH of the discharge shall not be less than 4.5 or greater than 9.0. [Monitored at EFF-001]
2. No waste constituents 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.
3. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. Objectionable odors shall not be perceivable beyond the limits of the Winery or the land application areas at an intensity that creates or threatens to create nuisance conditions.
6. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
7. All conveyance, treatment, and storage systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

**D. Reuse Area Specifications**

1. For the purpose of this Order, "Reuse Area" refers to the discharge area described in Finding 12.
2. BOD loading to the Reuse Area calculated as a cycle average as determined by the method described in the attached MRP, shall not exceed 100 lbs/acre/day.
3. The discharge of wastewater and application of solids to the Reuse Area shall be distributed uniformly in a manner to prevent odors or nuisance conditions.

4. The perimeter of the Reuse Area shall be graded to prevent ponding along public roads or other public areas and prevent runoff or overspray onto adjacent properties not owned or controlled by the Discharger.
5. Crops shall be grown within the Reuse Area. Crop selection shall be based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake.
6. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of wastewater and irrigation water below the root zone (i.e., deep percolation).
7. Application of waste constituents shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management. The annual nutritive loading to the Reuse Area, including the nutritive value of organic and chemical fertilizers and of the wastewater, shall not exceed the annual crop demand, except for potassium, which may be applied at rates exceeding crop demand, due to the fact that crops can take up more potassium than required with no decrease in yield.
8. Discharge of wastewater to areas within the Reuse Area shall cease in the event soils become saturated.
9. The resulting effect of the discharge on soil pH shall not exceed the buffering capacity of the soil profile.
10. The Reuse Area shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within 48-hours;
  - b. Ditches not serving as wildlife habitat should be maintained 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.

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

Solids as used in this document, means the residual solids including grape pomace plus diatomaceous earth mixed with grape solids from wine product filtration. Sludge as used in this document, means the solids, semi-solid, and liquid residues produced during wine making or cleaning of wine making equipment.

1. Any handling and storage of residual solids and sludge shall be temporary and 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. 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**

1. Release of waste constituents from any treatment, reclamation, or storage component associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or background quality, whichever is greater:
  - (i) Nitrate (as N) of 10 mg/L.
  - (ii) For constituents identified in Title 22, the MCLs quantified therein.

#### **G. Provisions**

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger shall comply with MRP R5-2013-0069, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. 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. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the appropriate Central Valley Water Board office (currently, the Fresno office).
5. To assume operation 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 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 Water Code. 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.

6. The Discharger shall keep at the Winery a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
7. The Discharger must 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 include 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 only when the operation is necessary to achieve compliance with the conditions of this Order.
8. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Central Valley Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
9. The Discharger shall submit all technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.
10. All technical reports and work plans required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. As required by these laws, completed technical reports and work plans must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. All reports required herein are required pursuant to Water Code section 13267.
11. **By 2 December 2013**, the Discharger shall submit a Salinity Control Plan, with salinity source reduction goals and an implementation time schedule for Executive Officer approval. The control plan should identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible, include an estimate on load reductions that may be attained through the methods identified, and provide a description of the tasks, cost, and time required to investigate and implement various elements in the salinity control plan. The Discharger shall implement the plan in accordance with the approved schedule.

12. **By 2 December 2013**, the Discharger shall submit a Wastewater and Nutrient Management Plan. At a minimum the Plan must include procedures for monitoring Winery operations including daily records of wastewater applications and acreages, an action plan to deal with objectionable odors and/or nuisance conditions, a discussion on blending of wastewater and supplemental irrigation water, supporting data and calculations for monthly and annual water and nutrient balances, and management practices that will ensure wastewater, irrigation water, and commercial fertilizers are applied at agronomic rates.
13. **By 2 June 2014**, the Discharger shall submit a Solids Management Plan for Executive Officer approval that describes specific measures that will be implemented to ensure that the temporary storage of solids shall not cause or contribute to nuisance conditions or groundwater degradation. At a minimum the Plan shall include management practices that will minimize the potential for leachate and include a soil sampling plan to be incorporated into the MRP to monitor soil within the solids stockpile area or provide plans and a time schedule for construction of an impervious barrier within the solids stockpile area to prevent leachate from reaching the soil.
14. If the Central Valley Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for potential constituents.
15. 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.
16. 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, and 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, section 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 filling 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 the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 31 May 2013.

*Original signed by:*

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PAMELA C. CREEDON, Executive Officer

Order Attachments:

A Site Location Map  
Monitoring and Reporting Program R5-2013-0069  
Information Sheet  
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2013-0069

FOR

SAN JOAQUIN WINE COMPANY, INC.  
WINERY  
MADERA COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program). The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 7.

<u>Monitoring Location Name</u>	<u>Monitoring Location Description</u>
EFF-001	Location where a representative sample of the Winery's effluent can be obtained after the aboveground storage tanks and prior to blending with irrigation water.
SPL-001	Location where a representative sample of the Winery's source water can be collected.

### EFFLUENT MONITORING

The Discharger shall monitor the effluent from the Winery at EFF-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Flow	mgd	Continuous
Weekly	pH	pH Units	Grab
Weekly	EC	umhos/cm	Grab
Weekly/Monthly <sup>1</sup>	BOD <sub>5</sub>	mg/L	Grab
Weekly/Monthly <sup>1</sup>	TDS	mg/L	Grab
Weekly/Monthly <sup>1</sup>	FDS	mg/L	Grab
Weekly/Monthly <sup>1</sup>	Nitrate as N	mg/L	Grab
Weekly/Monthly <sup>1</sup>	Ammonia	mg/L	Grab
Weekly/Monthly <sup>1</sup>	TKN	mg/L	Grab
Weekly/Monthly <sup>1</sup>	Total Nitrogen	mg/L	Computed
Monthly	General Minerals	mg/L	Grab

1. Effluent sampling shall be conducted weekly during the crush season (typically from mid-August through October) and monthly the remainder of the year.

### SOURCE WATER MONITORING

The Discharger shall monitor the Winery's source water supply well at SPL-001 as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Annually <sup>1</sup>	EC	umhos/cm	Grab
Annually <sup>1</sup>	TDS	mg/L	Grab
1/three years <sup>2</sup>	General Minerals	mg/L	Grab

1 Sample to be collected annually during the crush season.

2 Sample to be collected once every three years during the crush season. Starting the season following adoption of this Order.

### REUSE AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the Reuse Area. The data shall be collected and presented in tabular format and shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily	Application Area	acres	n/a
Daily	Wastewater flow	gallons	Metered
Daily	Wastewater loading	inches/acre	Calculated
Daily	Supplemental irrigation	inches	Estimated
Daily	Precipitation	inches	Rain gage <sup>1</sup>
Monthly	Total Hydraulic Loading <sup>2</sup>	inches/acre-month	Calculated
<u>BOD Loading<sup>3</sup></u>			
Daily	Day of Application	lbs/acre	Calculated
Average	Cycle Average <sup>4</sup>	lbs/acre-day	Calculated
<u>Nitrogen loading<sup>3</sup></u>			
Annual	From wastewater	lbs/acre-year	Calculated
Annual	From fertilizers	lbs/acre-year	Calculated
<u>Salt loading<sup>3</sup></u>			
Annual	From wastewater	lbs/acre-year	Calculated

<sup>1</sup> National Weather Service or CIMIS data from the nearest weather station is acceptable.

<sup>2</sup> Combined loading from wastewater, irrigation water, and precipitation.

<sup>3</sup> Loading rates shall be calculated using the applied volume of wastewater, applied acreage, and average effluent concentrations for BOD, total nitrogen, and FDS.

<sup>4</sup> The BOD loading rate shall be divided by the # of days between applications to determine the cycle average.

In addition, the Discharger shall inspect the application areas on a daily basis when discharging. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in field logs and included as part of the monitoring report.

### REPORTING

All monitoring results shall be tabulated and submitted in **Quarterly Monitoring Reports**, which shall be due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

First Quarter Monitoring Report	<b>1 May</b>
Second Quarter Monitoring Report	<b>1 August</b>
Third Quarter Monitoring Report	<b>1 November</b>
Fourth Quarter Monitoring Report	<b>1 February</b>

**A transmittal letter shall accompany each Quarterly Monitoring Report.** The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or Plant modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The following information is to be included on all monitoring reports, as well as any report transmittal letters, submitted to the Central Valley Water Board:

San Joaquin Wine Company, Inc.  
Winery  
R5-2013-0069  
Contact Information (telephone number and email)

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements.

In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

At any time henceforth, the State Board or Central Valley Regional Water Board may notify the Discharger to electronically submit monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) or similar system. Until such notification is given, the Discharger shall submit hard copy monitoring reports.

**A. All Quarterly Monitoring Reports**, shall include the following:

**Wastewater Reporting:**

1. Results of effluent monitoring specified on page 2.
2. For each month of the quarter, calculation of the maximum daily and monthly average daily discharge flows to the Reuse Area.
3. For each month of the quarter, calculation of the average monthly total nitrogen concentration in the discharge to the Reuse Area.

**Reuse Area Reporting:**

1. For each quarter, identify the areas of the Reuse Area that receive wastewater including volume applied and the dates it was applied.
2. Provide results of monitoring specified on page 3 for each discrete application area.

**B. Fourth Quarter Monitoring Reports:**

**Facility Information:**

1. The names and telephone numbers of persons to contact regarding the discharge for emergency and routine situations.
2. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
3. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

**Wastewater Reporting:**

1. Summary of tabulated results of effluent monitoring specified on page 2.
2. Calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.

**Reuse Area Reporting:**

1. Summary results of the routine monitoring and loading calculations specified on page 3.
2. The type of crop(s) grown in the Reuse Area, include planting and harvesting dates.
3. A summary of the notations made in the Reuse Area monitoring log. The entire contents of the log do not need to be submitted.

### **Solids Reporting**

1. Annual production totals for solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
  - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
  - b. For land application, include: the location of the site (field identification), and the Order number of any WDRs that regulate it.
  - c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
  - d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
  - e. For animal feed, include: the location of the site, and the Order number of any WDRs that regulate it.
3. Provide results of monitoring specified in the Solids Management Plan required by Provision G.13 of Order R5-2013-0069.

### **Source Water Reporting**

1. The results of annual monitoring for EC, TDS, and general minerals (if required) as specified on page 2. If multiple wells are used the Discharger, shall calculate the flow-weighted average concentrations for the specified constituents. Results must include supporting calculations, if required.

The Discharger shall implement the above monitoring program on the first day of the calendar quarter following adoption of this Order.

*Original signed by:*  
Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer  
  
\_\_\_\_\_ 31 May 2013  
(Date)

## GLOSSARY

BOD <sub>5</sub>	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
DO	Dissolved oxygen		
EC	Electrical conductivity at 25° C		
FDS	Fixed dissolved solids		
NTU	Nephelometric turbidity unit		
TKN	Total Kjeldahl nitrogen		
TDS	Total dissolved solids		
TSS	Total suspended solids		
Continuous	The specified parameter shall be measured by a meter continuously.		
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected every day.		
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.		
Weekly	Samples shall be collected at least once per week.		
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.		
Monthly	Samples shall be collected at least once per month.		
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months.		
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.		
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.		
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.		
mg/L	Milligrams per liter		
mL/L	Milliliters [of solids] per liter		
ug/L	Micrograms per liter		
umhos/cm	Micromhos per centimeter		
mgd	Million gallons per day		
MPN/100 mL	Most probable number [of organisms] per 100 milliliters		
General Minerals	Analysis for General Minerals shall include at least the following:		
	Alkalinity	Chloride	Potassium
	Bicarbonate	Hardness	Sodium
	Calcium	Magnesium	Sulfate
	Carbonate	Phosphorus	TDS
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		

## INFORMATION SHEET

INFORMATION SHEET - ORDER R5-2013-0069  
SAN JOAQUIN WINE COMPANY, INC.  
WINERY  
MADERA COUNTY

### **Background**

The San Joaquin Wine Company, Inc., a California corporation, (hereafter Discharger) owns and operates a Winery at 21801 Avenue 16 in Madera County. The Winery occupies a portion of an existing on-site structure. Stellar Produce, Inc. (a tenant), occupies the remaining portion of the structure where it operates a dry pack and cold storage facility for fresh fruits and produce. There is no discharge associated with the packing operations.

The Winery accepts grapes from local growers. The grapes are brought in and pressed to remove the juice. The juice is then placed in stainless steel tanks and barrels, where it is fermented and filtered to produce various blends of red or white wine. After the fermentation is complete the wine is bottled on-site for distribution and sale. No distillation occurs at the Winery.

Discharges from the Winery were previously waived under Resolution R5-2003-0106 *Waiver of Waste Discharge Requirements for Small Food Processors, Including Wineries, Within the Central Valley Region* (Waiver). In June 2009, the Discharger submitted a Report of Waste Discharge (RWD) to expand its operations in excess of the limits imposed by the Waiver.

### **Existing Winery and Discharge**

The Winery operates year round, but the primary period of operation is the harvest or crush season that extends from mid-August through October. Typically from October through March, the wines are transferred from tanks to barrels and back again for bottling. Beginning in December and continuing through April the wines are bottled. Starting in May, the tanks and barrels are washed and cleaned prior to the next season's harvest.

In 2012, the Winery crushed approximately 500 tons of grapes and generated about 1.1 million gallons of wastewater for an average of about 3,000 gallons per day (gpd). At full production, the Discharger estimates that the Winery will crush up to 5,000 tons of grapes and generate approximately six million gallons of wastewater per year for an average of 16,000 gpd.

Wastewater consists primarily of wash water generated from washing of various tanks, barrels, bottles, and filters, wash down of surface areas around the grape presses and production areas, and cooling water blowdown. The RWD estimates that cooling water discharges will be minor and account for less than 100 gpd.

Wastewater generated at the Winery is collected in floor drains and diverted to the Winery sump. From the sump the wastewater is pumped through a parabolic screen and stored in two aboveground tanks with a combined capacity of 25,000 gallons. When the aboveground tanks are nearly full, the wastewater is pumped to an irrigation standpipe and blended with irrigation water before it is applied to crops on approximately 32 acres of farmland (Reuse Area) owned by the Discharger. Crops grown within the Reuse Area include, approximately 19.5-acres planted with apricot trees. The remaining 12.7-acres is a grape vineyard.

Solids greater than 60 microns are screened out of the wastewater prior to discharge. Screenings and other residual solids generated at the Winery include pomace (grape pulp and skins), grape stems, leaves, and spent diatomaceous earth. During the crush season the solids are collected and

stockpiled along the first row of grape vines adjacent to the Winery structure. After the crush, the solids are removed from the site and mixed with other green waste. The solids are then spread on farmland, including the Reuse Area owned by the Discharger, as a soil amendment. The annual volume of solids stockpiled on-site is estimated at less than 500 cubic yards, and as such is exempt from permitting requirements of CCR, Title 14, section 17855 (a)(4). Lees and other sediment collected during the wine filtration are stored in bins within the cold storage facility until they are sold and hauled off-site.

As the Winery was previously regulated by a Waiver, there is no analytical data to estimate potential loading characteristics of the discharge. Central Valley Water Board staff used standard data from other similar small wineries as well as data from the Waiver to establish wastewater characteristics for the discharge. General wastewater characteristics for winery wastewater are presented below:

Biochemical Oxygen Demand (BOD) = 300 to 12,000 milligrams per liter (mg/L),  
Total dissolved solids (TDS) = 80 to 3,000 mg/L; and  
Total nitrogen (TN) = 1 to 50 mg/L

Source water for the Winery is provided by an on-site supply well. A sample collected from the supply well in 2009 reported an EC of 650 umhos/cm, a TDS of 390 mg/L, and a nitrate as nitrogen concentration of 7.9 mg/L.

### **Groundwater Conditions**

The Winery does not have a groundwater monitoring well network at this time. However, the Winery is on the eastern side of the San Joaquin Valley where groundwater is expected to be of good quality. The site sits on the eastern edge of the Corcoran Clay, which is encountered at about 200 feet below grade in this area. Well logs for the area indicated that soil down to 200 feet consists primarily of sands with intermittent layers of fine grained sands, silts, and clay lenses.

Sources of recharge in the area includes: precipitation, percolation of wastewater and irrigation water, and snow melt from the nearby Sierra Nevada.

According to the Department of Water Resources Groundwater Elevation Maps (Spring 2010), first-encountered groundwater beneath the Winery and Reuse Area occurs in an unconfined aquifer at about 160 to 170 feet below ground surface (bgs), and flows to the west-northwest.

Shallow groundwater monitoring data for the City of Madera's Wastewater Treatment Facility, approximately 3 miles up-gradient of the site, reports background groundwater quality as relatively good. Monitoring wells north of this facility report EC and TDS levels of 400 to 600 umhos/cm and 320 to 500 mg/L, respectively, with nitrate as nitrogen ranging from 5.2 to 11 mg/L.

The California Department of Water Resources and the United States Geological Survey publish information about groundwater quality. Data that is pertinent to characterizing first encountered groundwater is limited due to the wide variability in the screened interval of the wells, sampling dates, and constituents monitored. Samples from two up-gradient and two down- or cross-gradient wells collected in the 1960s (screened above 200 feet bgs) had EC of less than 800 umhos/cm, TDS of less than 500 mg/L, and nitrate as nitrogen from 1 to 8.4 mg/L.

The Discharger will not be required to conduct groundwater monitoring at this time. This Order requires wastewater effluent monitoring and loading calculations. Should constituent concentrations and loadings exceed those described in this Order, the monitoring and reporting program will be modified to require a groundwater monitoring evaluation work plan to evaluate any potential impacts from the discharge.

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

The Winery and Reuse Area lie within the San Joaquin Valley Floor Basin. Local drainage is to the Fresno River, a tributary of the San Joaquin River.

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4th Edition*, revised October 2011 (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. Beneficial uses often determine the water quality objectives that apply to a water body. The receiving water for this discharge is groundwater. The beneficial uses of groundwater in the area include municipal and domestic supply, agricultural supply, and industrial process and service supply.

### **Antidegradation**

State Water Resources Control Board Resolution 68-16 requires the regional water boards to maintain high quality waters of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

Constituents of concern in the discharge (those with the greatest potential to affect beneficial uses) include organics, nutrients, and salts.

- a. For organics, using the estimate effluent concentration for BOD of 300 to 12,000 mg/L, an assumed 3-day cycle average BOD loading to the Reuse Area at the proposed flow of 25,000 gpd will be between 1.9 and 83 lbs/acre/day.

To minimize the potential for reducing and/or nuisance conditions, this Order sets a BOD loading limit for the Reuse Area, requires cessation of discharge in the event soils become saturated, and requires the Discharger to prepare a Wastewater and Nutrient Management Plan. With the conditions stipulated in this Order and best management practices implemented by the Discharger, such as blending with fresh irrigation water, and resting periods of 3 to 7 days between applications the discharge is not expected to cause nuisance conditions, or groundwater degradation due to organic loading.

- b. For nitrogen, using the maximum estimated effluent concentration for nitrogen of about 50 mg/L, the nitrogen load to the Reuse Area with a discharge of up to six million gallons per year will be about 78 lbs/acre/year. This is below the nitrogen requirement for apricots and grapes grown within the Reuse Area. With careful management and tracking required by this Order of the application of wastewater and any additional fertilizers, the discharge is not expected to cause groundwater degradation for nitrates.

- c. For salinity in general, food processing wastewater may contain elevated concentrations of TDS resulting from the fruit and vegetable products or materials used for production. Typically, a percentage of the TDS is organic, which will generally decompose into its component elements and be utilized by plants and microorganisms within the soil. In contrast, the inorganic or fixed dissolved solids, is that portion of the TDS, which consists of inorganic constituents which can accumulate in the soil. Excessive salt is then leached to groundwater where it can degrade groundwater quality.

From sampling done at other wineries, the volatile portion can make up almost 50% of the dissolved solids in the discharge. Taking into account that 50% of the dissolved solids may be volatile dissolved solids, the estimated concentration of fixed dissolved solids (FDS) in the discharge will be between 390 mg/L (TDS of source water) and 1,500 mg/L. With a FDS concentration of between 390 and 1,500 mg/L, the annual salt load to the Reuse Area with an annual discharge of up to six million gallons per year will be between 600 and 2,400 lbs/acre/year. A significant portion of the inorganic or FDS in the discharge includes nutrients essential for plant growth. Growing and harvesting crops provides a means to remove some of these constituents, particularly calcium, magnesium, potassium, and phosphorus.

- d. The discharge is not expected to cause groundwater to exceed water quality objectives for salinity or to adversely affect beneficial uses since: (1) prior to discharge, process wastewater is stored in aboveground tanks precluding direct discharges to groundwater, (2) the applied wastewater will account for less than 15% of the irrigation demand, meaning any percolating water will be diluted with better quality irrigation water, (3) a portion of the inorganic fraction of the wastewater consists of constituents beneficial for plant growth including potassium, calcium, magnesium, and phosphorus, which will be taken up by crops further reducing the salt load to the Reuse Area, and (4) as water percolates over the 160 feet to groundwater many salinity constituents will be transformed/fixed within the soil column.

To ensure the ongoing quality of the discharge with respect to salinity, this Order includes effluent monitoring for salinity constituents and loading rates and requires the Discharger to prepare and implement a Salinity Control Plan to minimize the salinity of the discharge to the extent feasible.

This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan. This Order is consistent with the Antidegradation Policy in that the Discharger has implemented BPTC to minimize degradation, the limited degradation allowed by this Order will not unreasonably affect present and future beneficial uses, or result in water quality less than water quality objectives, and the limited degradation is of maximum benefit to people of the State.

### **CEQA**

On 20 February 2007, Madera County Planning, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 12000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended) adopted a Mitigated Negative Declaration in conjunction with a Conditional Use Permit (CUP #2006-13) for operation of the existing packing house with expansion of the Winery including discharge of winery wastewater as irrigation on adjacent farmland. The Central Valley Water Board, as a responsible agency, commented on the

Mitigated Negative Declaration and agreed with the conclusion that the proposed expansion and discharge would have a less than significant effect on water quality.

### **Title 27**

Unless exempt, the release of designated waste is subject to full containment pursuant to Title 27 requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the wastewater exemptions found at Title 27, sections 20090(b), since:

- a. The Central Valley Water Board is issuing WDRs;
- b. The discharge is in compliance with the Basin Plan; and
- c. The treated effluent does not need to be managed as hazardous waste.

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions, Specifications and Provisions**

The proposed Order prohibits discharge to surface waters and drainage courses. The proposed Order limits the monthly average daily flow to 25,000 gallons per day (gpd) and sets an annual flow limit of six million gallons per year.

The proposed Order sets a BOD loading limit for application of wastewater to the Reuse Area of 100 lbs/acre/day calculated as a cycle average and requires that wastewater be applied at agronomic rates for hydraulic and nutrient loading, except for potassium. In addition, the proposed Order requires the Discharger to prepare a Salinity Control Plan and Wastewater and Nutrient Management Plan to control the salinity of the discharge and ensure application at agronomic rates.

The proposed Order requires monitoring of the discharge for biochemical oxygen demand, nitrogen, and total and fixed dissolved solids. The Order also requires a detailed accounting of the application of wastewater to the Reuse Area. For each discrete area to which wastewater is applied, the Order requires calculated hydraulic loading rates, and loading rates of biochemical oxygen demand, nutrients, and salts.

The proposed Order includes a Provision requiring the Discharger to submit and implement a Solids Management Plan that details specific measures to ensure that the temporary storage of solids from the Winery shall not cause or contribute to nuisance conditions or groundwater degradation. At a minimum the Plan requires the Discharger to provide management practices to minimize the potential for leachate and provide a soil sampling plan to monitor soil in the solids stockpile area, or to provide plans and a time schedule for construction of an impervious barrier to prevent leachate from reaching the soil.

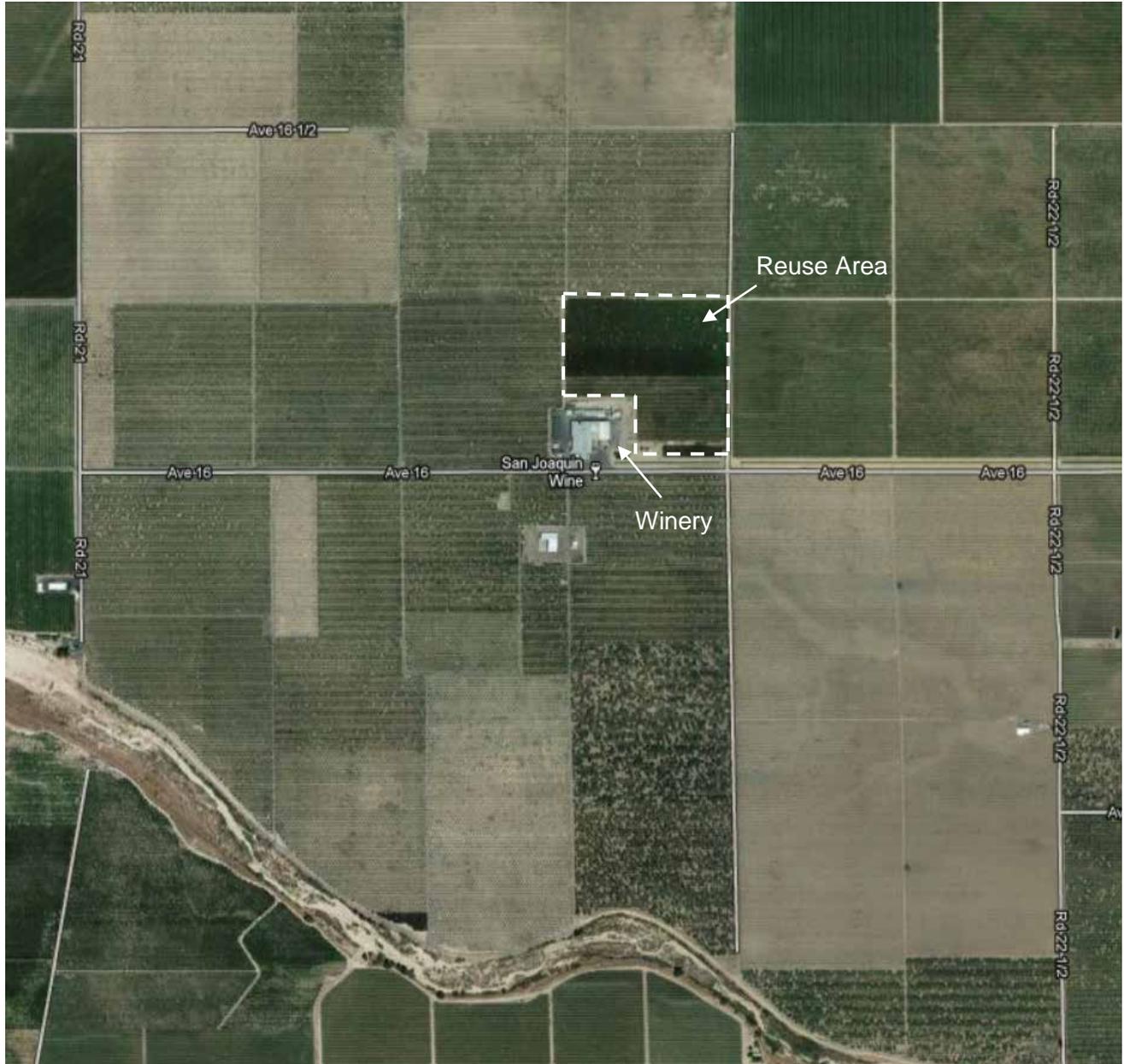
The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greater. The proposed Order sets a groundwater limit for nitrate at the Primary MCL of 10 mg/L.

### **Monitoring Requirements**

Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Water Code section 13268 authorizes the assessment of administrative civil liability where appropriate. The proposed Order includes effluent monitoring requirements. In addition, the proposed Order requires monitoring of the Land Application Site and loading calculations for organics, nutrients, and salts. This monitoring is necessary to characterize the discharge, and evaluate compliance with effluent limitations and discharge specifications prescribed in the Order.

### **Reopener**

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if new technical information is provided or if applicable laws and regulations change.



Map Source:  
NAIP Aerial Photograph (2005)  
Section 7, T11S, R17E MDB&M

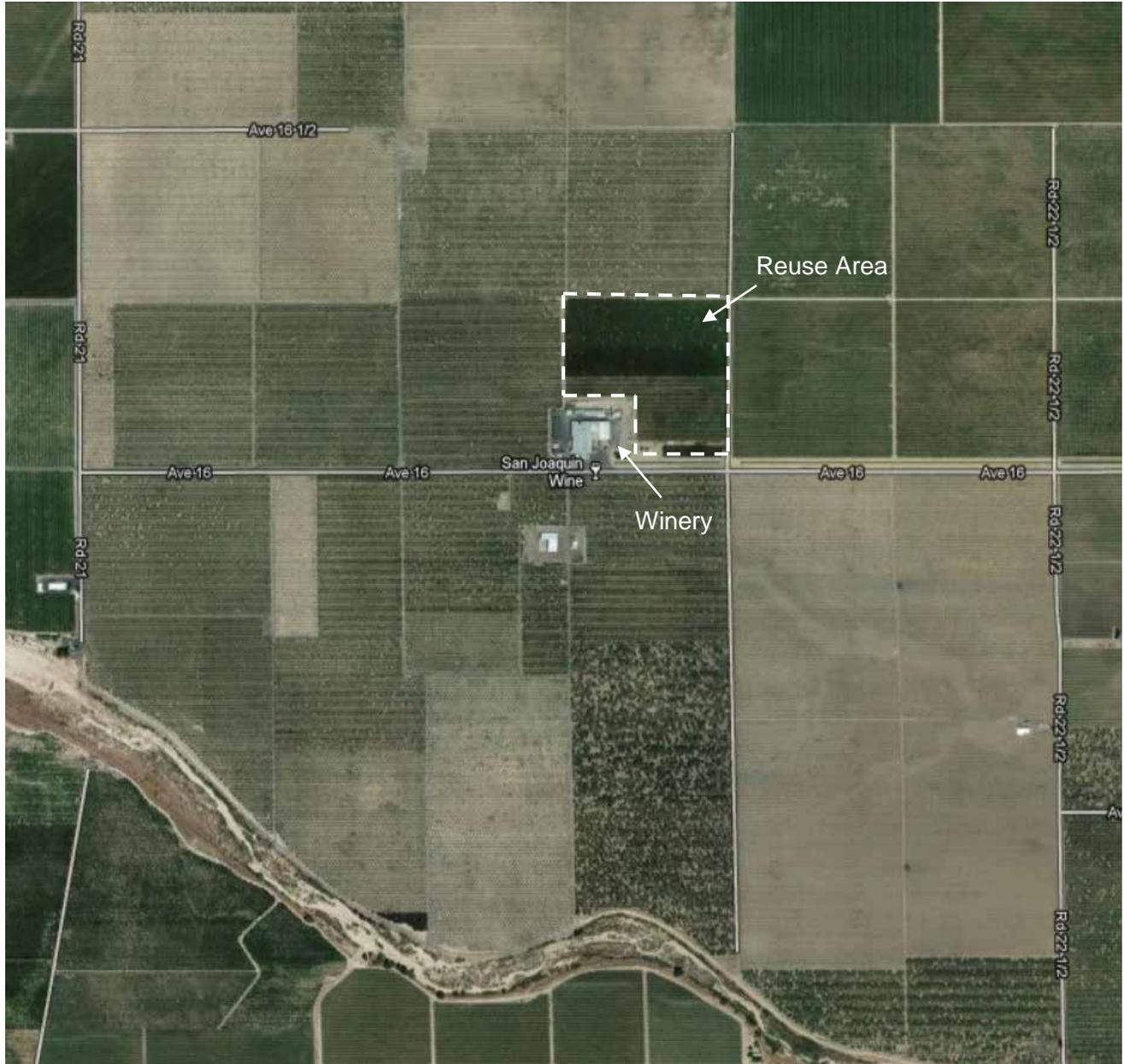


Not to Scale

### FACILITY MAP

WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-0069  
FOR  
SAN JOAQUIN WINE COMPANY, INC.  
WINERY  
MADERA COUNTY

ATTACHMENT A



Map Source:  
NAIP Aerial Photograph (2005)  
Section 7, T11S, R17E MDB&M



Not to Scale

### FACILITY MAP

WASTE DISCHARGE REQUIREMENTS ORDER R5-2013-0069  
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