TENTATIVE
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2020-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
BRONCO WINE COMPANY
STANISLAUS COUNTY

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

1. On 20 December 2018, Bronco Wine Company submitted a Report of Waste Discharge (RWD) that describes an existing winery that generates process wastewater that is discharged to land, with process solids disposed of off-site. A revised RWD with additional information was submitted on 22 October 2019 and additional data were submitted in the first quarter of 2020.

2. Bronco Wine Company (hereafter Discharger) owns and operates the facility that generates the waste and the associated land discharge areas and is responsible for compliance with these Waste Discharge Requirements (WDRs). The Discharger has owned the winery since 1973.

3. The facility, which includes the winery and land application areas (LAAs), is at 6342 Bystrum Road in Ceres, Stanislaus County (Sections 33 and 34, T4S, R9E, MDB&M). The facility occupies assessor's parcel numbers (APNs) as listed in Table 1 and as shown on Attachment A, which is attached hereto and made part of this Order by reference. A proposed additional land application parcel is addressed later in this Order in the Planned Changes section.

Table 1. Assessor's parcel numbers

Description	APN
Winery, storage, and wastewater ponds	041-046-020
LAA (Bronco Grove Almonds)	041-046-012, 041-046-013
LAA (Reno Ranch)	041-049-022, 041-049-023, 041-050-001

4. WDRs Order No. 96-247, adopted by the Central Valley Water Board on 20 September 1996, prescribes requirements for the discharge. Order No. 96-247 allows a monthly average dry weather flow up to 0.65 million gallons per day (MGD). Due to the age of the existing permit and the Discharger's proposed changes to its LAAs, an updated Order is required. Therefore, Order No. 96-247 will be rescinded and replaced with this Order.

EXISTING FACILITY AND DISCHARGE

5. The Bronco Wine Company facility (Winery) occupies approximately 169 acres with 47 acres consisting of warehouses, offices, wine processing facilities, and aboveground

storage tanks associated with wine making operations and 122 acres of land application areas consisting of ponds, almond orchard, and cropped land.

6. The winery processes between 300,000 and 450,000 tons of grapes annually, producing approximately 60 to 80 million gallons of wine per year. The grapes are crushed then the juices are fermented, pressed, filtered, stabilized, stored, bottled, and packaged. The winery operates 24 hours per day, seven days per week during the crush season (typically July through October), and 24 hours per day, five days per week during the remaining year. Approximately 500 staff are on site during crush season; offseason, approximately 400 staff are on site.

7. Source water for the winery's processing and potable uses can be supplied by three on-site water wells (Well Nos. 1, 2, and 4). Due to water quality issues with Wells No. 1 and 4, only Well No. 2 is currently used for potable water. Water pumped from Well No. 2 is passed through granular activated carbon (GAC) filters to remove the undesirable groundwater constituent 1,2-dibromo-3-chlorproprane (DBCP). Most recent water quality data for Supply Well No. 2 is summarized below by sample date. Concentrations are in milligrams per liter (mg/L).

Table 2. Supply Well water quality. Units are mg/L unless otherwise noted.

Constituent	2 OCT 2012	6 OCT 2015
Electrical conductivity (EC) [µmhos/cm]	696	726
Total dissolved solids (TDS)	470	490
Sodium	73	78
Chloride	110	120
Sulfate	17	14
Nitrate as N	4.7	3.3
Iron	<0.050	<0.050
Manganese	0.034	0.035

8. The Discharger uses potassium hydroxide, sodium hypochlorite (bleach), and citric acid for cleaning and sanitation. Of these, sodium hypochlorite has the greatest potential to negatively impact the quality of groundwater.

9. Process wastewater is generated from processing grapes, boiler blowdown, tanker washout, reverse osmosis reject, equipment cleaning and sanitation, and bottling on site, and includes distilling material generated at an offsite facility owned by the Discharger. Cleaning water is single pass. Attachment C shows the winery and wastewater generation processes.

10. The liquid distilling material is trucked from a facility owned by Bronco Wine Company but located in Napa County and is made up of truck wash and other wine residues, reportedly no different than process wastewater generated at the Ceres facility. Per requirements of the US Alcohol and Tobacco Tax and Trade Bureau each tanker is tested for alcohol content before being discharged to the facility's sump. The pH is also checked prior to discharge.

11. The wastewater treatment system consists of a collection sump, a storage tank, percolation / evaporation ponds, and land application areas.

    a. Process wastewater drains to a collection sump along with storm water runoff from the processing areas of the facility.

    b. From the sump, wastewater is pumped through one of two parallel discharge lines (north line and south lines). The north pipeline is directed to a 0.5 million gallon above-ground stabilization tank. The tank is located on a concrete pad, with an additional pad available if an additional storage tank if needed in the future. The south pipeline is used to transfer very heavy flow (e.g. from a storm event) directly to pond IB-4.

    c. Wastewater from the stabilization tank is pumped either to LAAs or unlined percolation-evaporation ponds, shown on the site plan (Attachment B) and as part of the block flow diagram (Attachment C).

    d. Effluent flow rate is measured at each of the sump discharge lines, while the tank volume change is used to measure the actual volume of wastewater discharged in a given period.

12. Table 3 lists average monthly process wastewater flows and the calculated contribution from storm water. Storm water amounts were calculated based on California Irrigation Management Information System (CIMIS) data from 2013-2018. Average daily wastewater flows from the sump are based on data from January 2013 - August 2019.

Table 3. Average daily flow rates by month in gallons per day (gpd).

Month	Wastewater Flow	Stormwater Contribution
October	486,555	19,684
November	362,905	35,878
December	309,423	43,757
January	361,526	70,705
February	352,377	59,234
March	361,463	59,448
April	319,687	37,473
May	305,392	15,837
June	290,857	376
July	358,703	155
August	563,084	97
September	579,119	1,644

13. Wastewater has historically been sampled from the collection sump. Analytical data collected weekly from January 2013 to October 2018 are summarized in Table 4. Fixed dissolved solids (FDS) data are from June 2018 through October 2018 only. Data for pH are presented as a range.

Table 4. Wastewater Quality Summary. Units are mg/L unless otherwise noted.

Parameter	Units	Average
Biological oxygen demand (BOD)	mg/L	2,373
Total suspended solids (TSS)	mg/L	182
Fixed dissolved solids (FDS)	mg/L	631
EC	µmhos/cm	1,174
TDS	mg/L	1,271
Nitrate as nitrogen	mg/L	3.2
TKN	mg/L	21
Total nitrogen	mg/L	24
pH	s.u.	3.9 – 10.0

14. Reno Ranch fields (RR-1, RR-2, and RR-3) make up 86 acres of forage-cropped LAAs. Wastewater used for irrigation is confined to the LAAs by a combination of natural site topography and berms around the LAAs. The LAAs are flood irrigated. There is no tailwater reapplication because there is no tailwater: LAAs are flooded minimally, not to excess, and no water runs off due to the presence of small berms confining the LAA borders.

15. The unlined ponds, known as infiltration basins IB-1 to IB-5, together cover 15.7 acres of land. The working hydraulic capacity of IB-4 is 21.3 acre-ft, while each of the other ponds' hydraulic capacity is approximately 9.4 acre-ft, all with 2 feet of freeboard. The ponds slope generally to a maximum depth of five feet, including at minimum 2 feet of freeboard, except for IB-4.

16. IB-4 is uniquely deeper, with a maximum depth of ten feet, because it is designed to take on stormwater directly from the impermeable surfaces of the facility which normally flow to the wastewater sump. This is an emergency measure used, if needed, to avoid overflowing the LAAs in an intense precipitation event where saturated soil conditions may exist.

17. Pond maintenance includes regular tilling to incorporate any settled solids or sludge into the underlying soil Following tilling the ponds bottoms are graded to ensure consistent capacity is maintained.

18. Average hydraulic and constituent loading rates for data collected from January 2013 to August 2019 are summarized below. Loading rates are shown in pounds per acre per day (lb/ac/day).

Table 5. Effluent BOD and Nitrogen with LAA Loading Rates

Month	Applied WW (gpd)	Average BOD (mg/L)	BOD Loading (lb/ac/day)	Average N (mg/L)	Nitrogen loading (lb/ac/day)
Jan	281,003	1,871	43	41.3	29.7
Feb	332,058	2,257	62	23.4	17.9
Mar	299,923	2,286	56	28.6	21.9
Apr	140,478	1,754	20	22.5	7.8
May	318,843	1,814	48	11.5	9.4

Month	Applied WW (gpd)	Average BOD (mg/L)	BOD Loading (lb/ac/day)	Average N (mg/L)	Nitrogen loading (lb/ac/day)
Jun	666,908	1,211	67	20.0	33.0
Jul	393,123	2,223	72	16.9	17.0
Aug	580,225	3,143	150	14.8	21.9
Sep	551,412	4,517	205	35.2	47.9
Oct	328,304	3,657	99	40.7	34.1
Nov	309,921	1,635	42	24.8	19.0
Dec	243,863	2,300	46	14.0	8.7
TOTAL	4,446,061				

19. Solids generated during processing, including stems, pomace, spent filter powder, oak chips, and diatomaceous earth, are either hauled off-site on a daily basis or temporarily stored on a large concrete area which slopes to drain to a process sewer connected to the collection sump. The stored solids are then hauled off-site for various uses and disposal. Solids are not land-applied at the LAAs.

20. Water balances were included in the 2019 RWD; one for an average rainfall year and one for a 100-year return period annual rainfall event. Based on the water balances, wastewater is being applied at agronomic rates. The total crop demand is generally greater than the volume of wastewater applied; therefore, supplemental irrigation is sometimes needed to meet crop demand. Supplemental irrigation water is provided from the nearby Turlock Irrigation District (TID) canal.

21. A storm water watershed is located in the western portion of the facility. The watershed area includes an existing parking lot, roof, and driveway areas that do not come in contact with wastewater generated during processing. The watershed area consists of two zones: the northwest zone, which discharges to a storm water retention basin, and the southwest zone, which discharges to a storm water spreading area and is used for irrigation.

22. Domestic wastewater generated at the facility is treated via a system of septic tanks and leach fields, permitted through the Stanislaus County Environmental Health Department. Domestic wastewater is not commingled with process wastewater and does not discharge to the LAAs.

23. Static groundwater levels were below the monitoring well screen intervals during the drought years of 2015 and 2016 for three of the monitoring wells. Groundwater levels have risen since then and two of the repeatedly problematic wells were replaced in 2017.

24. Compliance history shows three effluent flow-rate limit exceedances, wastewater applied in excess of crop demand, effluent pH outside of the range limits, and dry groundwater monitoring wells. Most violations were in the years between 2003 and 2010.

    a. In 2003 the Discharger received a notice of violation for degrading a water supply, exceeding allowable flow, applying wastewater in excess of crop demand, degrading groundwater to a degree that adversely affects agricultural use, submitting incomplete monitoring reports, and not calibrating meters.

b. During 2009 and 2010 the Discharger received one notice of violation for failure to submit a monitoring report, and 23 notices of violation for effluent pH limit exceedances.

c. In 2016 the Discharger received a notice of violation for deficient monitoring for each of the four calendar quarters of that year due to several dry monitoring wells.

PLANNED CHANGES IN THE FACILITY AND DISCHARGE

25. The 20-acre parcel just north of the winery facility and west of RR-2 is proposed to be used for additional land application area. This parcel, called Bronco Grande Almonds (BGA) is an established almond orchard. An existing monitoring well, MW-3, is located downgradient of this proposed LAA. With the addition of this parcel the total available LAA is 105.6 acres, in addition to ponds with total surface area of 15.7 acres. Individual LAA and pond sizes are summarized in

Table 6.

Table 6. Land application areas and ponds

Name	Type	Area (acres)
Reno Ranch 1 (RR-1)	field (LAA)	38
Reno Ranch 2 (RR-2)	field (LAA)	21.6
Reno Ranch 3 (RR-3)	field (LAA)	26
Bronco Grande Almonds (BGA), proposed	orchard (LAA)	20
Infiltration Basin 1 (IB-1)	pond	3.14
Infiltration Basin 2 (IB-2)	pond	3.14
Infiltration Basin 3 (IB-3)	pond	3.14
Infiltration Basin 4 (IB-4)	pond	3.14
Infiltration Basin 5 (IB-5)	pond	3.14
Total	combined	121.3

27. The Discharger is considering installing additional ponds in land currently used for land application.

SITE-SPECIFIC CONDITIONS

28. Land use surrounding the facility is generally agricultural, mainly almond orchards.

29. The topography of the surrounding area is relatively flat. Surface water drainage from the facility is directly to local soil. The nearest surface water bodies to the Facility are the Tuolumne River and the San Joaquin River, located approximately 5 miles north and 12 miles west, respectively.

30. Precipitation and evapotranspiration data were collected from the CIMIS Modesto (#71), Patterson (#161), and Denair II (#206) stations, all less than 15 miles from the Winery. Average rainfall from 2013 through 2019 was 9.4 inches per year, and average reference evapotranspiration during the same time period was 57.4 inches per year. The 100-year annual precipitation was approximately 23.8 inches per year.

31. The site is not in any floodplain, being more than four miles away from the furthest extent of the FEMA-projected 500-year flood in the area.

32. Four soil map units comprise the LAA soils: Dinuba sandy loam, Dinuba sandy loam slightly saline-alkaline, Hanford sandy loam, and Tujunga sandy loam. These soils are generally shallow, coarse textured soils characterized by alluvium derived from granite and are moderate to very permeable.

GROUNDWATER CONDITIONS

33. The facility and land application areas are located on ancient alluvial sand, silt, and gravel deposits of the Modesto and Riverbank formations. The facility and LAAs are located within the western half of the Turlock sub basin of the San Joaquin Valley Basin.

34. Groundwater at the facility is approximately 25 to 45 feet below ground surface (ft bgs). Depth to groundwater has increased historically in the area due to increased groundwater pumping for agricultural use.

35. The current groundwater monitoring network consists of 14 onsite wells as shown on Attachment B. Well construction details are summarized in Table 7. Depth to water is as reported for the fourth quarter of 2017 in feet below ground surface (ft bgs).

Table 7 Monitoring Well Details

Well ID	Construction year	Screened interval (ft bgs)	Depth to water (ft bgs)	Relative Location
MW-1R	2017	25-45	23.1	Downgradient of ponds and LAAs
MW-2	1985	no data	25.7	Downgradient of ponds and LAAs
MW-3	1985	no data	27.6	Downgradient of ponds and LAAs
MW-4	1985	no data	25.4	Downgradient of ponds and LAAs
MW-5	1985	no data	27.0	Mid-gradient of ponds and LAAs
MW-6	1985	no data	24.9	Mid-gradient of LAAs
MW-7	approx. 1997	no data	26.9	Mid-gradient in RR-2
MW-8	approx. 1997	20-50	26.4	Upgradient of LAAs
MW-9	approx. 1997	20-50	25.1	Upgradient of RR-1
MW-10	approx. 1997	15-35	28.5	Upgradient of RR-3
MW-11	approx. 1997	10-30	26.8	Downgradient of RR-3
MW-11R	2017	26-41	26.3	Downgradient of RR-3
MW-12	approx. 1997	9-29	26.6	Upgradient (at edge of RR-3)
MW-12R	2017	32-47	27.3	Upgradient (at edge of RR-3)

36. Monitoring well MW-1R is the replacement for MW-1 which was abandoned in 2017 because it was located within the alignment of new railroad spurs at Bronco. Monitoring wells MW-11R and MW-12R were installed because original wells MW-11 and MW-12

were dry; MW-11R and MW-12R were drilled approximately 15 feet deeper than the original wells. MW-11 and MW-12 are scheduled for abandonment in 2020.

37. The horizontal groundwater flow direction tends to be somewhat variable between due south and north-northwest, though the hydraulic gradient is generally to the west-southwest toward the San Joaquin River Valley. A mounding influence has been observed downgradient of the percolation ponds.

38. Groundwater quality for data collected between January 2013 to August 2019 is summarized in Table 8 for up-gradient wells, and in Table 9 for down-gradient wells. These tables illustrate the spatial variability of groundwater quality with calculated average values and the general trend of change over the sample period shown for TDS and nitrate nitrogen.

Table 8 Upgradient Groundwater Quality, mg/L unless otherwise noted

Well ID	EC [µmhos/cm]	TDS	trend	Nitrate nitrogen	trend	Total nitrogen
MW-8	843	583	steady	19	increasing	20
MW-9	1698	1190	steady	49	decreasing	51
MW-10	1384	839	steady	2.7	steady	6
MW-12R	588	381	increasing	1.2	steady	2.2

39. Average upgradient concentration of TDS in MW-9 and average nitrate concentrations in MW-8 and MW-9 exceed the concentrations protective of beneficial use (1,000 mg/L for TDS and 10 mg/L for nitrate nitrogen).

Table 9 Down-gradient Groundwater Quality Data, mg/L unless otherwise noted

Well ID	EC [µmhos/cm]	TDS	trend	Nitrate nitrogen	trend	Total nitrogen
MW-1R	1263	896	steady	25	steady	26.3
MW-2	1029	700	increasing	8.7	steady	10.1
MW-3	1546	1057	increasing	11	steady	12.3
MW-4	1930	1286	steady	1.2	steady	2.3
MW-5	2558	1847	decreasing	16	increasing	17.2
MW-6	1775	1151	decreasing	7.6	increasing	8.9
MW-11R	1234	728	decreasing	ND	steady	5.8

40. In all downgradient wells, average nitrate concentrations are less than the average nitrate concentrations reported in upgradient well MW-9. TDS concentrations are spatially variable throughout the site, with average concentrations ranging from 866 mg/L to 2,586 mg/L. The average annual TDS value across all monitoring wells in the year 2000 was 868 mg/L; in 2018 the average annual TDS concentration for a comparable set of groundwater monitoring data was 1112 mg/L, representing an increase of 28 percent over eighteen years.

41. Although groundwater shows an increase in total salts over time, it is not clear whether the increase is due to the discharge described in this Order or whether it is due to increased upgradient agricultural activities unrelated to this discharge.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

42. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fifth Edition, revised May 2018* (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 California Water Code (CWC) section 13263(a), waste discharge requirements must implement the Basin Plan.

43. Local drainage is to groundwater. 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.

44. The beneficial uses of the nearest surface water, the Tuolumne River, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial process supply; groundwater recharge; fresh water replenishment; navigation; water contact recreation; non-contact water recreation; commercial and sport fishing; warm freshwater habitat; cold freshwater habitat; estuarine habitat; wildlife habitat; migration of aquatic organisms; and spawning.

45. 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.

46. 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.

47. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (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.

48. The narrative toxicity water quality 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.

49. 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.

50. 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 µmhos/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 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop. The list of crops in Finding 5 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 agricultural practices in the area.

51. The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. The Basin Plan amendments were conditionally approved by the State Water Board on 16 October 2019 (Resolution 2019-0057) and by the Office of Administrative Law on 15 January 2020 (OAL Matter No. 2019-1203-03).

    a. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers may comply with the new nitrate program either individually or collectively with other dischargers. For the Nitrate Control Program, the Facility falls within Groundwater Basin 5-022.03 (San Joaquin Valley Turlock Sub-basin), a Priority 1 Basin. Notices to Comply for Priority 1 Basins will be issued starting in late May 2020.

    b. For salinity, dischargers that are unable to comply with stringent salinity requirements will instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. Dischargers will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of 17 January 2020, the effective date of the amendments. Upon receipt of the Notice to Comply, the discharger will have no more than six months to inform the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting).

52. As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs to ensure the goals of the Salt and Nitrate Control Programs are met. This order may be amended or modified to incorporate newly applicable requirements.

SPECIAL CONSIDERATIONS FOR SALINE WASTE

53. For the purpose of this Order, saline waste is defined as wastewater that contains high concentrations of fixed dissolved solids. Because salts occur naturally in all waters, and because the naturally occurring salt concentrations vary depending on the water supply, it is not practical to define saline waste region-wide as that which exceeds a certain FDS

concentration. Generally speaking, saline waste is that for which the FDS concentration is more than 300 mg/L higher than the TDS concentration of the water supply. Although there are many individual ions that can impact the beneficial uses of groundwater, nitrate, sodium, and chloride are the predominant salts of concern in the Central Valley Region.

54. Saline wastewaters can be associated with use of ion exchange water softening systems used to treat hard water, which adds sodium and chloride. Saline wastewaters can also be associated with industrial boilers, evaporative cooling systems, and reverse osmosis water purification systems, which concentrate all of the salts present in the source water. The degree of concentration varies depending on the efficiency of the systems and operational practices. Some industries can generate high volumes of these wastes. Additionally, food processors (including wineries) often use caustic cleaning solutions and/or sodium hypochlorite for equipment cleaning and sanitation, which adds sodium and chloride.

55. Some salts are plant macronutrients (e.g., nitrogen, potassium, and phosphorus) and the threat to groundwater quality posed by these salts can be minimized through controlled use to irrigate crops at agronomic rates for these nutrients. Because nitrate and nitrate precursors are common constituents in food processing wastewater, either treatment to reduce the nitrogen content or reuse for crop irrigation are important methods to prevent exceedance of the water quality objective for nitrate in groundwater.

56. Sodium is commonly present in natural waters and many wastewaters, as noted above. The movement of dissolved sodium and other cations in soil depends in part on the soil's cation exchange capacity (CEC). CEC is generally higher in soils with higher clay and/or humus content, and CEC increases with increases in pH. Cations such as sodium can adsorb to negatively charges inorganic and organic soil particles. Once adsorbed, the minerals are not easily lost during leaching, but can be replaced or exchanged by other cations. Excessive sodium applications to cropland, if not leached, can cause loss of soil productivity due to soil sodicity. Sodium adsorption ratio (SAR) is a measure of the degree to which a soil's cation exchange capacity has been exhausted.

57. For some industrial wastewaters, particularly food processing waste, sodium concentrations may be reduced or controlled by changing from sodium-based cleaning solutions (such as sodium hydroxide) to potassium-based solutions (such as potassium hydroxide). Because potassium is a plant nutrient, land application systems can be designed maximize potassium uptake by the crop.

58. Chloride is an anion that moves readily through the soil column with percolation. It will not adsorb to soil as sodium can, and crop uptake of chloride is minimal for most crops. However, plants do take up chloride and excessive chloride in the soil and/or irrigation water can be toxic to crops. Crop sensitivity to chloride varies greatly, but leaching is often used to control chloride to keep crop land in production. Leaching, whether intentional or not, can degrade groundwater quality and may cause water quality objectives for chloride to be exceeded.

SPECIAL CONSIDERATIONS FOR HIGH-STRENGTH WASTE

59. For the purpose of this Order, high-strength waste is defined as wastewater that contains concentrations of readily degradable organic matter that exceed typical concentrations for domestic sewage. Such wastes contain greater than 500 mg/L BOD and often contain commensurately high levels of TKN, which is a measure of organic nitrogen and ammonia nitrogen. Typical high-strength wastewaters include septage, some food processing wastes, winery wastes, and rendering plant wastes.

60. 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.

61. Unless groundwater is very shallow, groundwater degradation with nitrogen species such as ammonia and nitrate can be prevented by minimizing percolation below the root zone of the crops and ensuring that the total nitrogen load does not exceed crop needs over the course of a typical year. Where there is sufficient unsaturated soil in the vadose zone, excess nitrogen can be mineralized and denitrified by soil microorganisms.

62. 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 breeding of flies. 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.

63. 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 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.

64. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency (EPA), cites BOD loading rates in the range of 36 to 600 lb/ac/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 prevalent throughout the region.

65. The California League of Food Processors' *Manual of Good Practice for Land Application of Food Processing/Rinse Water* (*Manual of Good Practice*) 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.

66. 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, are considered a best management practice to prevent groundwater degradation due to reduced metals.

67. This Order sets an irrigation cycle average BOD loading rate for the LAAs of 300 lb/ac/day, which greater than the rate consistent with Risk Category 3 in the *Manual of Good Practice* for discharges using flood irrigation application to land with well drained soils, but is based on local best practice, lack of odor issues, and no evidence to date of development of anoxic conditions in the vadose zone. This Order requires the Discharger to ensure the even application of wastewater over the available land application areas.

ANTIDEGRADATION ANALYSIS

68. 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 is consistent with the maximum benefit to the people of the state.

    b. The degradation will not unreasonably affect present and anticipated future beneficial uses.

    c. 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, and

    d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

69. Degradation of groundwater by some of the typical waste constituents associated with discharges from a winery, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The

economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.

70. The Discharger has been monitoring groundwater quality at the site since at least 1985. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility must be based on existing background groundwater quality.

71. Upgradient monitoring wells are MW-9, MW-10, and MW-12R. MW-8 is considered upgradient as long as the hydraulic gradient is more to the south or southwest than due west. Downgradient monitoring wells are MW-1R, MW-2, MW-3, MW-4, and MW-11R.

72. Constituents of concern that have the potential to degrade groundwater include salts (primarily TDS, sodium, and chloride) and nitrate as nitrogen as discussed below. Average effluent and groundwater concentrations for each constituent are shown in Table 10. Effluent data in the table represents a flow-weighted average calculated using data collected between 2015-2019, including winery process wastewater mixed with storm water in the sump and applied to land. Concentrations protective of beneficial use (CPBU) are based on the following: Secondary Maximum Contaminant Upper Level for TDS and chloride; Primary Maximum Contaminant Level for nitrate as nitrogen; lowest agricultural water quality goal for sodium and EC. CPBU has not been established (NE) for FDS.

Table 10 Antidegradation summary with upgradient and downgradient water quality parameter concentrations. Units in mg/L unless otherwise noted.

Constituent	Effluent	Upgradient	Downgradient	CPBU
EC [µmhos/cm]	1244	1037	1572	700 (note 1)
TDS	1214	730	1061	1000 (note 2)
Nitrate N	2.0	17	13	10 (note 3)
Total N	19.1	19	14	NE
Sodium	107	no data	no data	69 (note 1)
Chloride	139	no data	no data	600 (note 2)
FDS	631	no data	no data	NE

Table 10 notes
1. Lowest agricultural water quality goal
2. Secondary maximum contaminant, upper level
3. Primary MCL

a. **Total Dissolved Solids.** For the purpose of evaluation, TDS is representative of overall salinity. FDS is the inorganic faction of TDS that has the potential to percolate or leach to groundwater. Therefore, the best measure of salinity in process wastewater is FDS and in groundwater, TDS is the best measure of salinity. As noted in previous findings, background groundwater quality is spatially variable with respect to TDS and may have been degraded by agricultural land use upgradient of the site. The average wastewater FDS concentration is 631 mg/L. TDS concentrations in upgradient monitoring wells average 730 mg/L, whereas

downgradient monitoring wells average 1,061 mg/L. Therefore, the discharge has caused exceedance of the concentration protective of beneficial use. .

Based on the planned expansion of LAAs and monitoring improvements described in this Order, groundwater quality with respect to TDS is expected to improve over time, but it is not possible to predict the level of improvement that can achieved or when it might occur. Therefore, this Order sets a groundwater limitation for TDS that prohibits any statistically significant increase in groundwater TDS and includes a time schedule in the Provisions that requires the Discharger to complete the proposed improvements and evaluate the effectiveness of salinity reduction measures implemented to date. If the required improvements do not result in significantly improved groundwater quality with respect to TDS concentration within five years of adoption of this Order, the Provisions require that the Discharger implement additional treatment or control as necessary to bring the discharge into compliance with the Basin Plan water quality objectives.

b. **Nitrate.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality; crop uptake, and the ability of the vadose zone below the LAAs to support nitrification and denitrification to convert the nitrogen to nitrogen gas before it reaches the water table. Most of the nitrogen in the process wastewater is present as TKN, which can readily mineralize and convert to nitrate (with some loss via ammonia volatilization) in the LAAs. Upgradient groundwater quality is poor with respect to nitrogen, exceeding the primary MCL. The poor-quality background groundwater is likely due to the predominantly agricultural land use in the area. Nitrate concentrations in groundwater downgradient of the current unlined ponds and LAAs are lower than in background groundwater, though still exceeding the primary MCL. The recent change in LAA use (from a mix of grape vines and fodder crops to all fodder crops) and the expanded LAA system will maximize nitrogen uptake and minimize the potential for nitrate to migrate to groundwater. Therefore, this Order requires that nutrients associated with the wastewater and other sources be applied to the LAAs at rates consistent with crop demand, and the Groundwater Limitations require that the discharge not cause any statistically significant increase in groundwater nitrate concentrations.

c. **Sodium and Chloride.** Sodium and chloride are known to be key salinity constituents in winery wastewater. Upgradient and downgradient monitoring wells have not been monitored for sodium and chloride, but sodium in the process wastewater averages 107 mg/L, which is higher than the concentration protective of beneficial use. This Order will require sodium and chloride to be monitored in groundwater. For the continued protection of groundwater, this Order does not allow groundwater concentrations for sodium and chloride to exceed of the concentrations protective of beneficial use or a statistically significant increase in groundwater concentrations.

73. The Discharger provides treatment and control of the discharge that incorporates:

a. clean in place (CIP) systems in some process operations, allowing reuse of process water, reducing wastewater volume;

b. high-pressure water instead of standard spray for washing, where practical, reducing wastewater volume;

c. the use of hot water for cleaning which reduces chemical usage for cleaning;

d. the use of KOH instead of NaOH for cleaning, along with citric acid, reduces sodium loading in wastewater.

e. the use of ozonated water and chlorine dioxide for sanitation where practical, reducing total sodium hypochlorite use.

The Discharger's implementation of these practices is considered BPTC for the wastes in the discharge. This Order requires the Discharger to maintain these practices consistent with the State Antidegradation Policy.

74. With respect to TDS an unacceptable degree of groundwater degradation has occurred. Therefore, this Order does not authorize any continued degradation beyond that which exists today for that constituent. The Groundwater Limitations are effective immediately and allow no degradation beyond existing groundwater quality in any compliance monitoring well and this Order requires intrawell analysis of compliance well groundwater monitoring data to determine compliance with the Groundwater Limitations. However, it is not possible to predict the level of improvement that can be achieved or when it may occur, or the influence that upgradient activities may have on water quality. If the required improvements do not result in a statistically significant improvement in downgradient groundwater quality within **five (5)** years of adoption of this Order, the Discharger will be required to implement additional treatment or control as necessary to bring the discharge into compliance with the Basin Plan water quality objectives. This Order also requires that the Discharger evaluate existing and potential future local agricultural uses of groundwater to support determination of site-specific water quality objectives for TDS and sodium that are protective of all beneficial uses.

75. This Order also requires implementation of upgrades and any additional measures that will be required to comply with the Groundwater Limitations of this Order, and which are expected to result in significant improvements in the shallow groundwater quality beneath the site. This Order imposes effluent and mass loading rate limitations and contains a time schedule for the implementation of additional treatment or control to ensure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved while minimizing further degradation that may occur pending completion of the required tasks. Following completion of the time schedule, this Order will be reopened, if necessary, to reconsider effluent limitations and other requirements to comply with Resolution 68-16. Based on the existing record, the discharge authorized by this Order is consistent with the Basin Plan.

OTHER REGULATORY CONSIDERATIONS

76. In compliance with CWC 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.

77. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B 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 a nuisance.*"

    b. Category B complexity, defined as: "*Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units.*"

78. As authorized under this Order, the discharge authorized herein and the treatment and storage facilities associated with the discharge, are exempt from the requirements of California Code of Regulations, title 27 (Title 27) §20090(b).

79. The statistical data analysis methods set forth in the EPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) are appropriate for determining whether the discharge complies with Groundwater Limitation of this Order.

80. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities and requiring submittal of a Notice of Intent by all affected industrial dischargers. All storm water at the facility is collected in the storm water basin or commingled with process wastewater and discharged to the LAAs. Storm water is not discharged offsite or discharged to waters of the U.S. Coverage under the NPDES General Permit CAS000001 is not required at this time.

81. California Water Code section 13267(b)(1) 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 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 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 R5-2020-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.

82. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (DWR Well Standards), as described in *California Well*

Standards Bulletin 74-90 (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

83. Stanislaus County has previously determined that the operation of this facility does not require the County to undertake a discretionary approval under the California Environmental Quality Act ("CEQA") (Pub. Resources Code, § 21000 et seq.). All wastewater management systems at the facility have already been installed and are currently in use. This Order places additional requirements on the continued operation of the facility to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of CEQA in accordance with California Code of Regulations, Title 14, (Title 14), Article 19 §15301, which exempts from environmental review the "operation, repair, maintenance, [and] permitting … of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or not expansion or exiting or former use".

    To the extent that the construction of any new wastewater ponds is authorized under this Order, such features involve minor alterations to land, which are exempt from CEQA procedural requirements pursuant to Title 14 Article 19 §15304, provided the alterations do not involve removal of healthy, mature trees.

    This Order is further exempt from CEQA procedural requirements insofar as it is adopted for protection of the environment and does not authorize construction activities or the relaxation of standards allowing for environmental degradation, in accordance with Title 14 Article 19 §15308.

84. Pursuant to CWC §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

85. 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.

86. 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.

87. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order 96-247 is rescinded and, pursuant to CWC sections 13263 and 13267, Bronco Wine Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses, including irrigation ditches outside of control of the Discharger, is prohibited.

2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 22, section 66261.1 et seq., is prohibited.

3. Discharge of waste classified as 'designated', as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

4. By-pass (the intentional diversion of waste streams from any portion of the treatment system) is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (Standard Provisions).

5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.

6. Discharge of toxic substances into any wastewater treatment system or land application area such that biological treatment mechanisms are disrupted is prohibited.

7. Application of residual solids to the land application areas is prohibited.

8. Discharge of domestic wastewater to the process wastewater treatment system is prohibited.

9. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.

10. Discharge of domestic wastewater to the process wastewater ponds, land application area, or any surface waters is prohibited.

11. The discharge of ion exchange regeneration waste effluent to the process wastewater pond or the land application area is prohibited.

B. Flow Limitations

1. **Effectively immediately**, flow from the process water sump to the process water tanks, as shown on Attachment C, shall not exceed the following limits, where Total Annual Flow is determined by the total flow for the calendar year, and Maximum Average Daily Flow is determined by the total flow during the calendar month divided by the number of days in that month.

Table 11 Flow limits

Flow Measurement	Flow Limit
Total Annual Flow, as determined by the total flow for the calendar year	175 MG
Maximum Average Daily Flow, including process water and storm water	0.65 MGD

C. Effluent Limitations

1. The wastewater shall not exceed the following effluent quality limit:

Table 12 Effluent limits

Constituent	Units	Flow weighted annual average
TDS Concentration	mg/L	1200

D. Mass Loading Limitations

1. The blend of treated wastewater, storm water, and supplemental irrigation water applied to the LAAs shall not exceed the following effluent and mass loading limits. The calculated annual maximum is a flow-weighted average based on total flow and concentration for each source of water discharged via flood irrigation.

   Compliance with these requirements shall be determined as specified in the Monitoring and Reporting Program.

Table 13 Mass loading limits

Constituent	Units	Maximum Irrigation Cycle Average	Annual Maximum
BOD mass loading	lb/ac/day	300	--
Total Nitrogen mass loading	lb/ac/day	agronomic rate	agronomic rate

E. Discharge Specifications

1. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by CWC 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 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 discharged at an intensity that creates or threatens to create nuisance conditions.

7. The Discharger shall design, construct, operate, and maintain all ponds (basins) sufficiently to protect the integrity of containment dams and berms and prevent

overtopping and/or structural failure. The operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

9. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications E.7 and E.8.

10. 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.

11. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

12. Storage of residual solids, including pomace and/or diatomaceous earth, on areas not equipped with means to prevent storm water infiltration, or a paved leachate collection system are prohibited.

13. Application of pomace and/or diatomaceous earth to LAAs is prohibited.

F. Groundwater Limitations

Release of waste constituents from any portion of the facility shall not cause groundwater to:

1. Release of waste constituents from any portion of the facility shall not cause groundwater to:

a. Contain any of the specified constituents in a concentration statistically greater than the maximum allowable concentration in Table 14. The wells to which these requirements apply are specified in the Monitoring and Reporting Program. "Current groundwater quality" means the quality of groundwater as evidenced by monitoring completed as of the date of this Order for each of the specified compliance monitoring wells listed in the Monitoring and Reporting Program.

Table 14 Maximum groundwater concentration limits

Constituent	Maximum Allowable Concentration
TDS	Current groundwater quality or concentration protective of beneficial use, whichever is greater
Nitrate nitrogen	Current groundwater quality or concentration protective of beneficial use, whichever is greater

b. Contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations. This applies to all compliance monitoring wells except as specified in limitation F.1.a, above.

c. Contain taste- or odor-producing constituents, toxic substances, or other constituents in concentrations that cause nuisance or adversely affect beneficial uses. This applies to all compliance monitoring wells except as specified in limitation F.1.a, above.

2. Compliance with these limitations shall be determined annually as specified in the Monitoring and Reporting Program using approved statistical methods.

G. Land Application Area Specifications

1. Crops or other vegetation (which may include pasture grasses, Sudan grass, winter forage, native grasses and trees, and/or ornamental landscaping) shall be grown in the LAAs.

2. Wastewater shall be distributed uniformly on adequate acreage within the LAAs to preclude the creation of nuisance conditions or unreasonable degradation of groundwater.

3. The Discharger shall maximize the use of the available LAAs to minimize waste constituent loading.

4. Hydraulic loading of wastewater and supplemental irrigation water shall be at reasonable agronomic rates.

5. Land application of wastewater shall be managed to minimize erosion.

6. The LAAs shall be managed to prevent breeding of mosquitoes or other vectors.

7. LAAs shall be designed, maintained, and operated to comply with the following minimum irrigation setback requirements:

a. Edge of LAA to property boundary: 25 feet.

b. Edge of LAA to manmade or natural surface water drainage course: 25 feet.

c. Edge of LAA to domestic water supply well: 100 feet.

8. LAAs shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Discharger shall temporarily stop wastewater application immediately and implement corrective actions to ensure compliance with this Order.

9. Any irrigation runoff (tailwater) shall be confined to the LAAs or returned to the ponds and shall not enter any surface water drainage course or storm water drainage system.

10. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is prohibited.

H. Solids Disposal Specifications

Sludge, as used in this document, means the solid, semisolid, and liquid organic matter removed from wastewater treatment, settling, and storage vessels or ponds. "Solid waste" refers to solid inorganic matter removed by screens and soil sediments from washing of unprocessed fruit or vegetables. Except for waste solids originating from meat processing, "residual solids" means organic food processing byproducts such as culls, pulp, stems, leaves, and seeds that will not be subject to treatment prior to disposal or land application.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal operation and adequate storage capacity.

2. Any handling and storage of sludge, solid waste, and residual solids shall be controlled and contained in a manner that minimizes leachate formation and prevents infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

3. If removed from the site, sludge, solid waste, and 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 for 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) will satisfy this specification.

4. 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.

I. Provisions

1. The following reports shall be submitted pursuant to CWC section 13267 and shall be prepared as described in Provision I.5:

   a. By **01 September 2021**, the Discharger shall submit a *Groundwater Limitations Compliance Assessment Plan*. The Plan shall propose and justify the values to be used to determine "current groundwater quality" (as defined in Groundwater Limitations F.1) for each of the compliance wells listed in the Monitoring and

Reporting Program (MRP), using intrawell evaluations. In addition, the plan shall propose and justify the statistical methods used to evaluate compliance with the Groundwater Limitations of this Order for the compliance wells and constituents specified in the MRP. Compliance shall be determined using appropriate statistical methods that have been selected based on site-specific information and the Unified Guidance document cited in Finding 78 of this Order. The report shall explain and justify the selection of the appropriate statistical methods.

b. By **01 March 2021**, the Discharger shall submit a *Salinity Minimization Plan for Discharges to Land* summarizing salinity minimization measures that have been implemented, and a time schedule for measures that will be implemented, to reduce the salinity in discharge to the extent feasible. The *Salinity Minimization Plan for Discharges to Land* shall include salinity source reduction goals and a time schedule to implement the identified measures to meet the goals. Based on a review of the results of implementation of the salinity evaluation and minimization plan this Order may be reopened for addition and/or modification of effluent limitations and requirements for salinity.

2. If groundwater monitoring results show that the discharge of wastewater is causing groundwater to contain any waste constituents in concentrations statistically greater than the Groundwater Limitations of this Order, **within 120 days of the request of the Executive Officer**, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent that exceeds a Groundwater Limitation. The workplan shall contain a preliminary evaluation of each component of the wastewater treatment, storage and disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable and shall not exceed one year after receipt of comments on the workplan. Alternatively, if it can be shown that the increase is the result of activities outside the Discharger's control, a technical report shall be submitted that justifies and supports that determination.

3. Prior to the start of any work to install a new pond or land application area, the Discharger shall submit a report for the Executive Officer's approval detailing the proposal. The report shall contain at a minimum a water balance indicating adequate storage and disposal capacity, a detailed description of the pond and or land application area (maps, site plans, conceptual drawings), and an anti-degradation analysis for the proposed location. Upon approval of the report, this Order may be amended to reflect the proposed change.

4. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

5. 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.

6. 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 foregoing provisions by the due dates specified.

7. The Discharger shall comply with Monitoring and Reporting Program **R5-2020-XXXX**, which is 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.

8. 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 Provisions."

9. 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.

10. 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 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 when the operation is necessary to achieve compliance with the conditions of this Order.

11. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.

12. Per 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.

13. In the event that the Discharger has a reportable toxic chemical release, and reports data to the State Emergency Response Commission (SERC) pursuant to § 313(a) of the Emergency Planning and Community Right to Know Act (42 U.S. Code § 11023), the Discharger shall also report he same information to the Central Valley Water Board within 15 days of the report to the SERC.

14. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal 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.

15. 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.

16. 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.

17. 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.

18. 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 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 CWC, 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 for administrative review in accordance with CWC section 13320, and California

Code of Regulations, Title 23, section 2050 et seq. To be timely, the State Water Board must receive the petition by 5 p.m. on the 30th day after the date of this Order, except that if the 30th day falls on a Saturday, Sunday or State Holiday, the petition must be received by the State Water Board by 5 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Water Boards' Petitions webpage (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region on DD Month 2020.

PATRICK PULUPA, Executive Officer

GLOSSARY

µmhos/cm	micromhos per centimeter (same as micro Siemens per centimeter)
bgs	below ground surface
BOD	Biological oxygen demand, also written as BOD_5
BPTC	Best practicable treatment and control
CEC	cation exchange capacity
CFR	Code of Federal Regulations
CIMIS	California Irrigation Management Information System
CIWQS	California Integrated Water Quality System
EC	Electrical conductivity at 25 ^oC
EPA	United States Environmental Protection Agency
FDS	Fixed dissolved solids
gpd	Gallons per day
LAA	Land application area
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MGD	Millions of gallons per day
MPN/100 ml	Most probable number per 100 ml (wet sample)
MUN	municipal and domestic supply (Basin Plan beneficial use designation)
NPDES	National Pollutant Discharge Elimination System
s.u.	standard units (for pH)
SERC	State Emergency Response Commission
TDS	Total dissolved solids
TKN	Total Kjeldhal nitrogen
Total Nitrogen	Nitrate and nitrite nitrogen plus TKN
WQO	Water quality objective