CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2006-0037-**001**

WASTE DISCHARGE REQUIREMENTS
FOR
GUENOC WINERY, INC.
GUENOC WINERY
LAKE COUNTY

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

1. Guenoc Winery, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 1 December 2004 with supplemental information submitted on 2 June 2005 and on 22 July 2005. Following a meeting with Regional Board staff, the Discharger submitted a revised RWD on 6 December 2005. Upon receipt of the tentative WDRs, the Discharger submitted additional revisions to the RWD on 4 April 2006.

2. Guenoc Winery is approximately two miles southeast of Middletown on Butts Canyon Road in Lake County (Assessors Parcel No. 014-310-006) in Section 4, T10N, R6W, MDB&M. The location of the winery and associated facilities is shown on Attachment A, which is attached hereto and made part of this Order by reference.

## PREVIOUS WASTE DISCHARGE REQUIREMENTS

3. Waste Discharge Requirements (WDRs) Order No. R5-2003-0175 prescribes requirements for Guenoc Winery's land discharge of winery wastewater and was adopted by the Regional Board on 5 December 2003. The WDRs allow the discharge of up to 11,000 gallons per day (gpd) of winery wastewater to a series of five unlined evaporation/percolation ponds. From the ponds, the wastewater may be discharged to approximately seven acres of pastureland (Dedicated Disposal Area No. 1; DDA-1) or to 54 acres of pastureland (DDA-2).

4. WDRs Order No. R5-2003-0175 states that the discharges from the ponds and DDA-1 have polluted the underlying groundwater with salts and therefore the discharge is classified as "designated waste". The Order requires the Discharger to submit a number of reports and to complete improvements, such that by 1 November 2005 the Discharger would no longer be discharging designated waste to the ponds or to DDA-1. The Discharger has not complied with the schedule in the WDRs. The WDRs also required that the Discharger submit an Engineering Feasibility Study and Corrective Action Plan to address cleanup of the polluted groundwater. While the Discharger submitted a document with this title, it did not meet the requirements of the WDRs as it did not contain the required information and stated that there was no need to clean up the polluted groundwater. In addition, the Discharger never made the improvements to DDA-2 to allow disposal of wastewater to that pasture, thereby exacerbating the groundwater impacts to DDA-1.

5. Order No. R5-2003-0175 must be revised to reflect the Discharger's proposal to treat the waste and discharge it to a lined pond, followed by discharge to unlined ponds and then to the 54-acre pasture. It is appropriate to prepare a companion Cease and Desist Order, as the Discharger will not be able to immediately comply with the limitations of this Order and because the Discharger must remediate its plume of polluted groundwater.

## BACKGROUND

6. Activities at the winery facility include receiving, crushing and pressing of grapes; fermentation; processing into finished white and red wines; and distribution.

7. Wine production and wastewater flow rates have been changing at this facility. For example, the 2003 WDRs state that the Discharger will produce up to 130,000 cases of wine and generate approximately four million gallons of wastewater annually. The 2005 RWD states that the Discharger will produce 140,000 cases of wine but only generate 2.4 million gallons of wastewater. Monitoring data submitted by the Discharger shows that 2.2 million gallons of wastewater were generated in 2004, while 1.63 million gallons were generated in 2005.

8. During wine production, various chemicals can be used as either an additive, a fining agent, or as a cleaner/sanitizer. The approximate quantities of additives and chemicals used in the wine-making process at this winery are as follows:

| Additives/Chemical | Quantity | Units |
|---|---|---|
| Chlorinated Trisodium Phosphate | 550 | Pounds per year |
| Citric Acid | 2,400 | Pounds per year |
| Sulfur Dioxide Gas | 100 | Pounds per year |
| Sodium Hydroxide | 1,500 | Pounds per year |
| Diatomaceous Earth Filter Powder | 3,500 | Pounds per year |
| Calcium Hypochlorite | 20 | Gallons per year |

9. Domestic water used for winemaking processes (including sanitation, grape crushing, barrel and equipment rinsing, filtering, and bottling) is obtained from an onsite well. The well water is first ozonated before being pumped to the winery. A portion of water is then softened and pumped through a multimedia sand and carbon filter. The water is used for the following winery purposes:

| Water Usage | Purpose | Treatment Required | Percent Usage |
|---|---|---|---|
| Ammonia condensers | Chillers, fermentation tanks | None | 29% |
| Hot water | Floor and tank washing, sterilization | Sodium Chloride (Softening) | 0.5% |
| Cold water | Kitchen, filling barrels, floor washing | None | 70% |
| Wine tasting room | Restrooms, sinks | Sodium Chloride (Softening) | 0.5% |

10. The following table presents wastewater concentrations for selected constituents collected during the 2004 and 2005 crush period. The 2004 data represents eighteen sampling events conducted from 25 August through 1 October 2004. The 2005 data represents 24 sampling events (four times per day over a six day period) from 25 October 2005 to 31 October 2005. It is noted that the RWD did not provide detection limits.

| Constituent | Units | 2004 Crush Concentration Range | 2005 Crush Concentration Range |
|---|---|---|---|
| pH | pH units | 6.6 - 7.6 | 3.8 – 6.8 |
| Total Dissolved Solids (TDS) | mg/L | 720 – 6,200 | 940 – 12,000 |
| Total Suspended Solids (TSS) | mg/L | 6.8 –1,800 | 23 – 1,800 |
| Biochemical Oxygen Demand | mg/L | 410 – 15,000 | 1,700 – 9,000 |
| Chemical Oxygen Demand | mg/L | 290 – 22,000 | Not Analyzed |
| Chloride | mg/L | 18 – 81 | 11 – 40 |
| Sulfate as $SO_4$ | mg/L | Non Detect to 350 | Not Analyzed |
| Nitrate as $NO_3$ | mg/L | Non-Detect | Not Analyzed |
| Total Kjeldahl Nitrogen (TKN) | mg/L | 12 – 42 | Not Analyzed |

A review of the above data shows that the TDS concentrations have increased dramatically, from a high of 6,200 mg/L in 2004 to a high of 12,000 mg/L in 2005, while the BOD concentrations have decreased, from a high of 15,000 mg/L in 2004 to a high of 9,000 mg/L in 2005.

11. The following table presents wastewater concentrations for selected constituents collected during the 2004 and 2005 non-crush period. Samples were collected once per month, except for specific conductivity, which was measured weekly.

| Constituent | Units | 2004 Non-Crush Concentration Range | 2005 Non-Crush Concentration Range |
|---|---|---|---|
| pH[1] | pH units | 7.16 – 9.64 | 6.5 – 10.03 |
| Specific Conductivity | $\mu$mhos/cm | 607 – 2,090 | 529 – 1,082 |
| Total Dissolved Solids | mg/L | 440 – 1,300 | 330 – 460 |
| Total Suspended Solids | mg/L | Non-Detect – 120 | Non-Detect – 13 |
| Biochemical Oxygen Demand | mg/L | 8 – 470 | 11 – 160 |
| Sulfate as $SO_4$ | mg/L | 1.6 – 66 | 2.7 – 13 |
| Total Kjeldahl nitrogen | mg/L | 3.6 - 31 | 2.1 - 95 |
| Nitrate as $NO_3$ | mg/L | Non-Detect | Non-Detect |

It is noted that TDS, BOD, and sulfate concentrations have decreased, while total Kjeldahl nitrogen and pH levels have increased.

## PROPOSED WASTEWATER TREATMENT SYSTEM

12. The following table summarizes the design criteria described in the RWD as used for designing the upgraded waste treatment system, ponds, and disposal field.

| Parameter | Design Criteria | Unit |
|---|---|---|
| Annual Wine Production | 140,000 | cases/year |
| Average Annual Discharge | 2,378,518 | gallons/year |
| Peak Daily Crush Discharge | 16,500 | gallons/day (gpd) |
| Average Daily Discharge | 6,800 | gallons/day (gpd) |

13. Wastewater generated from winery processing activities (process/equipment cleaning, washdown operations, and evaporative cooling towers) will continue to be collected in a series of trench floor drains both at the crush pad and inside the winery building. The wastewater then flows via gravity from the winery facility to a 600-gallon concrete vault located in the parking lot. A 2004 inspection of the vault by the Discharger indicated that it had no visible leaks or structural problems. The RWD states that visual inspections of the vault will occur on an annual basis.

14. From the vault, the wastewater will be pumped to a rotary screen and then to a new Bioreactor where the wastewater will receive biological treatment. The pumps will include a duplex/alternating "on-cycle" design with an integrated alarm and a four-float control system. The Bioreactor will consist of aeration tanks designed to treat a flow of approximately 16,500 gpd with a BOD concentration of 9,000 mg/L to a discharge concentration of 200 mg/L. A clarifier attached to the final aeration tank will be used to settle out the waste activated sludge. A process flow diagram is shown as Attachment B, which is attached hereto and made part of this Order by reference.

15. The RWD states that a magnetic flow meter will be installed to measure winery process water flows.

16. Ammonium hydroxide, phosphoric acid, and sodium hydroxide will be stored onsite in 80-gallon self-contained tanks. These chemicals will be added as necessary via metering pumps to the first stage of the bioreactor to adjust the pH levels.

17. The RWD states that as of September 2005 the Discharger has been using surface water from nearby Lake Bordeaux for the ammonia condensers. This change has resulted in the reduction of water softening and allows the water to circulate through the condensers six to eight times rather than only once prior to discharge. The table below presents the concentrations of selected constituents in water samples collected from the ammonia condensers in November 2005:

| Constituents | Units | Ammonia Condenser |
|---|---|---|
| pH | pH units | 8.6 |
| Total Dissolved Solids | mg/L | 340 |
| Total Suspended Solids | mg/L | 13 |
| Chloride | mg/L | 17 |
| Nitrate as Nitrogen | mg/L | <0.2 |
| Total Kjeldahl Nitrogen | mg/L | 6.3 |
| Total Nitrogen | mg/L | 6.3 |

18. The table below presents the design concentration ranges for the treated wastewater exiting the Bioreactor. The RWD does not describe how the Bioreactor will treat crush wastewater with a maximum TDS of 12,000 mg/L to an effluent with 900 mg/L TDS. However, because the RWD was prepared by a registered professional engineer, staff will accept that the treatment system and/or other operational changes will result in an effluent with a TDS concentration of 900 mg/L. This Order sets Effluent Limits based on the design criteria listed below.

| Constituents | Units | Effluent Concentration |
|---|---|---|
| pH | pH units | 6.8 - 7.2 |
| TDS | mg/L | 700 - 900 |
| TSS | mg/L | 40 - 60 |
| BOD | mg/L | 140 - 180 |
| Chloride | mg/L | 14 - 16 |

19. The Discharger proposes that wastewater will be discharged from the Bioreactor into one new pond (Pond A), which will be designed and constructed to meet Title 27 requirements. The five existing ponds will be abandoned in place, and the new lined pond will be built within their footprint. The Discharger proposes to use soil and clay from the existing ponds to construct the new pond; however, this may not be appropriate if those materials contain elevated levels of salt constituents and their use could contribute to continued groundwater pollution. Because the Discharger has not yet submitted a Title 27 RWD for this new pond, the companion Cease and Desist Order requires the submittal of a RWD, which must include a design that complies with Title 27 and the storage capacity requirements of this Order.

20. The Discharger submitted an interim water balance for the wastewater treatment, storage, and disposal system. It assumes only two inputs to the Pond A: 2.38 million gallons of wastewater and 67 inches of precipitation per year. The water balance shows that there will be no percolation from the pond, and that wastewater will be disposed of onto 54 acres of cropland in accordance with Discharge Specification D.9. The water balance is appropriately conservative in that it assumes that rainfall will preclude disposal onto the cropland for three months each winter. With these assumptions, the water balance shows that wastewater pond will have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation for a 100-year return period, and maintain two feet of freeboard at all times. However, the design of the wastewater pond is still under discussion, and therefore the Cease and Desist Order requires the submittal of a final water balance based on the final pond design.

21. Pond A will be equipped with an on-demand aeration device. The Discharger proposes to maintain a minimum of four feet of water in Pond A to allow the aerator to operate year-round. Clean irrigation water will be added to the pond whenever the level drops below four feet. The interim water balance included this proposal showed that the bottom four feet of Pond A is not necessary to meet the storage requirements of this Order, and it is assumed that the final water balance will also include a constant four feet of wastewater in the pond.

## DESIGNATED DISPOSAL AREA

22. The volume of wastewater generated at the winery is insufficient to meet the irrigation needs of the 54 acres of pastureland and therefore a substantial amount of clean irrigation water will be required for the pasture. The RWD states that the wastewater stored in Pond A will be blended with clean irrigation water in a mixing box prior to application to DDA-2, and the blending will be at a rate sufficient to meet the effluent and loading limits of this Order. The blending of wastewater and clean irrigation water will dilute the wastewater to reduce the TDS and BOD concentrations such that the waste will no longer be classified as "designated" and therefore it may be applied to land under this Order.

23. As stated above, the wastewater in Pond A will be diluted prior to irrigation with surface water from Lake Bordeaux. The water will then be applied via an irrigation pump using flood irrigation methods to DDA-2 (as shown in Attachment C, which is attached hereto and made part of this Order by reference). Because the water balance shows that the volume of wastewater is insufficient to meet the irrigation needs of the entire 54 acres of pasture, it is appropriate to allow the wastewater to be diluted by the supplemental irrigation water immediately prior to irrigation.

24. The RWD states that both DDA-1 and DDA-2 will be utilized for wastewater disposal until the treatment system described herein has been installed. After that point, DDA-1 will no longer be used for disposal. This Order allows the Discharger to continue to irrigate DDA-1 with wastewater until 1 September 2006.

25. Order No. R5-2003-0175 required that certain improvements be completed at DDA-2 prior to application of wastewater. Although the RWD states that a berm has been constructed around DDA-2, no report has been submitted to verify this statement. Therefore, this Order requires the Discharger to submit a report showing that the berms surrounding DDA-2 have been installed and tailwater/runoff control systems are functional.

26. The RWD presents the anticipated concentration ranges of blended surface water and wastewater prior to irrigation of DDA-2:

| Constituents | Units | Concentration Range |
|---|---|---|
| PH | pH units | 6.8 – 7.2 |
| Total Dissolved Solids | mg/L | 350 – 450 |
| Biochemical Oxygen Demand | mg/L | 70 – 90 |
| Chloride | mg/L | 7 - 9 |
| Total Kjeldahl Nitrogen | mg/L | 2 – 5 |

27. Native grasses grown on the DDA-2 will be grazed by livestock. The Discharger does not anticipate that mechanical harvesting of the grasses will be necessary.

28. Staff's conservative calculations of the potential impact from the discharge to DDA-2 (based on the concentrations listed in Finding No. 26) yields the loading rates in the table below. These rates

are contrasted with the loading rates proposed by the Discharger in its RWD.

| Constituents | Units | Discharger's Proposed Loading Rate (lb/acre/yr) | Staff's Calculated Loading Rate (lb/acre/yr) |
|---|---|---|---|
| BOD | mg/L | 66 | 33 |
| TDS | mg/L | 329 | 165 |
| TKN | mg/L | 3.7 | 1.8 |
| Chlorides | mg/L | 6.6 | 3.3 |

29. These loading rate calculations show that the nitrogen in the wastewater is less than the grass crop demand on the designated disposal area based on a nitrogen demand of 200 lbs/acre/year for native grasses. Grazing livestock will add some additional nitrogen. However, given the application method and loading, groundwater should not be degraded by nitrogen.

30. The loading rate calculations also show that the application of winery wastewater to the 54.3 acre DDA-2 should not cause an increase in the salt (measured as specific conductivity, TDS, or chloride concentrations) in the underlying groundwater. The "total dissolved solids" component of the wastewater is composed of both volatile dissolved solids (VDS) and inorganic dissolved solids (IDS). The proportion of VDS to IDS in wastewater varies with the source, but usually 50% of the TDS in winery wastewater is in the volatile form. While the majority of the VDS will be removed by the Bioreactor and the aerated pond, the remainder should be removed by the soil microorganisms in a well-managed land application system. The calculated 165 lb/ac/year of TDS discharged to DDA-2 should mainly be composed of IDS. The Discharger maintains that the proposed loading rate for TDS should not degrade the underlying groundwater as the pasture crop will uptake salt constituents. Success is highly dependant upon operation of the Bioreactor, proper design and construction of the lined pond, and blending the wastewater with irrigation water. Accordingly, it is appropriate to establish effluent limits and to require groundwater monitoring to detect whether the wastes are managed such that the discharge to DDA-2 is protective of groundwater quality.

## SOLID WASTE

31. Solid/semi-solid wastes such as pomace (skins, seeds, pulp, stems, etc. resulting from the grape crush), and wine settlement and filter cake media (bentonite and diatomaceous earth) are also generated by the processing operations. The pomace is temporarily stockpiled and composted within the boundaries DDA-2, and is then used as a fertilizer/soil amendment in the vineyards and other cultivated areas on the property.

32. The RWD states that the water softener will produce approximately four cubic feet of backwash brine per year, and that the waste will be hauled off-site for disposal. This Order requires that backwash brine be stored in a manner that will not impact water quality and that it be hauled offsite as needed to an approved facility.

33. The RWD states that the solids removed from the clarifier of the BioReactor and from the lined wastewater pond will be used as compost in DDA-2, and if necessary, hauled offsite to an approved septage receiving facility. It is estimated that on a yearly basis, 2,770 cubic feet of sludge will be generated from the Bioreactor and 48 cubic feet of sludge will be removed from the pond. Although the RWD states that the sludge will be applied at a rate of 50 lbs/ac/year to DDA-2, it does not provide any constituent concentrations or analysis to determine if this proposal is protective of water quality. Therefore, this Order prohibits the disposal of sludge to DDA-2 until the Executive Officer approves a technical report showing that the disposal will be protective of water quality.

## GROUNDWATER CONDITIONS

34. In October 2002, the Discharger abandoned three groundwater monitoring wells and installed four replacement wells (MWs 1 through 4) to monitor groundwater conditions around the wastewater storage ponds. The original wells were abandoned and replaced due to a lack of available information regarding their construction details. In addition to the four wells, the Discharger has since installed two additional monitoring wells (MW-5 and MW-6) north of the ponds, and MW-7, a background well. Locations of the monitoring wells are shown in Attachment C.

35. Lithologic data collected during the installation of the monitoring wells indicates that the subsurface geology consists of silty clay and clay ranging in depth from approximately 5 to 10 feet below ground surface (bgs), and is underlain by weathered bedrock.

36. Hydrologic data collected from the monitoring wells show that groundwater is encountered at a depths ranging from approximately two to 10 feet bgs. The monitoring reports state that the direction of groundwater flow beneath the wastewater storage ponds is northwest with a hydraulic gradient of 0.07 ft/ft. However, staff assumes that the five percolation ponds create a groundwater mound, and this fact is not necessarily reflected in the groundwater contour maps.

37. Monitoring data shows that the depth of groundwater below the bottom of the wastewater ponds varies seasonally. However, at certain times of the year groundwater rises up to within the ponds.

38. Beginning in November 2002, groundwater samples have been collected on a quarterly basis from wells MW-1 through MW-4. Beginning in May 2004, groundwater samples have been collected quarterly from wells MW-5 and MW-6, and beginning in December 2004 groundwater samples have been collected quarterly from MW-7. Data from November 2002 through December 2005 for selected constituents are found in the table on the next page.

    As shown on Attachment C, wells MW-1 through MW-4 are assumed to be within the mound created by the evaporation/percolation ponds. Wells MW-5 and MW-6 are downgradient of the ponds, along the downgradient boundary of DDA-1. Well MW-7 is northwest and outside of DDA-1, and is considered the background groundwater monitoring well.

**Groundwater Concentrations, Minimum-Maximum Range**

| Constituents | Units | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 | MW-7[1] |
|---|---|---|---|---|---|---|---|---|
| TDS | mg/L | 160 – 250 | 910 – 1300 | 480 – 930 | 470 – 660 | 800 – 930 | 470 – 730 | 300 - 490 |
| Specific Conductance | µmhos/cm | 134 – 500 | 459 – 2490 | 192 – 1600 | 188 – 1174 | 961 – 1495 | 713– 1027 | 455 – 591 |
| Calcium | mg/L | 12 – 17 | 29 –38 | 18 - 67 | 52 - 80 | 45 – 50 | 34 – 65 | 35-41 |
| Potassium | mg/L | <1.0 –2.3 | <1.0 – 6.1 | 1.4 – 7.6 | <1.0 – 3.1 | <1.0 – 1.5 | <1.0 – 4.9 | 3.1 – 4.9 |
| Magnesium | mg/L | 30 – 58 | 210 – 290 | 98 – 1200 | 82 – 120 | 160 – 190 | 65 – 81 | 28 – 37 |
| Sodium | mg/L | 12 – 23 | 31 – 79 | 11 – 100 | 6.4 – 9 | 16 – 18 | 34 – 40 | 22 – 64 |
| Chloride | mg/L | 8.1 – 26 | 120 – 220 | 8 – 160 | 9.2 – 18 | 72 – 110 | 12 – 130 | 11 - 16 |
| PH | pH Units | 7.02 – 8.66 | 7.06 – 7.61 | 6.98 –8.59 | 6.8 – 7.07 | 7.1 – 7.50 | 7.1- 7.61 | 7.47 – 8.0 |
| TKN | mg/L | <1.0 – 2.1 | <1.0 – 2.0 | <1.0 | <1.0 – 3.5 | <1.0 – 3.4 | <1.0 – 2.5 | <1.0 – 1.7 |
| Nitrate as N | mg/L | <0.2 – .54 | <0.2 – 1.8 | <0.2 – 3.6 | <0.2 – 0.85 | 5.9 – 7.0 | 0.31 – 1.7 | <0.2 –1.4 |
| Sulfate as SO4 | mg/L | 8.1 – 16 | 17 – 34 | 45 – 220 | 22 – 130 | 27 – 48 | 24 – 40 | 33 - 140 |
| Boron | mg/L | 2.1 – 2.4 | 0.46 – 0.55 | 0.23 – 0.53 | 0.91 – 1.3 | 0.22 – 0.28 | 0.14 –0.18 | 0.052 -0.33 |
| Iron | mg/L | <0.1 – 6.7 | <1.0 – 4.1 | <0.1 – 1.9 | <0.1 – 12 | 0.61 – 3.6 | <0.1 – 34 | <0.10 - 0.64 |

[1]Sample results from the first monitoring event (December 2004) are not included in the table as subsequent data shows that these are outliers and not representative of true groundwater conditions (i.e, the December 2004 sampling event shows that specific conductance, sodium, TDS, chloride, and sulfate were detected at concentrations significantly higher than subsequent sampling events).

39. The water quality limits used to implement applicable water quality objectives for the protection of beneficial uses of the groundwater for the constituents listed above are: 450 mg/L for TDS (agricultural water quality limit), 700 mg/L for specific conductance (agricultural water quality limit), 69 mg/L for sodium (primary MCL), 105 mg/L for chloride (agricultural water quality limit), 10 mg/L for nitrate-N (primary MCL), 250 mg/L for sulfate (primary MCL), 0.7 mg/L for boron (agricultural water quality limit), and 0.3 mg/L for iron (primary MCL).

40. A comparison of the pond and DDA-1 groundwater monitoring results with (a) background groundwater values (i.e, MW-7) and (b) with the above water quality limits shows that the discharge of waste has not just degraded groundwater but has also polluted groundwater. Groundwater has been polluted by TDS, specific conductance, magnesium, sodium, chloride, nitrate, sulfate, and iron. This is the same conclusion made in WDRs Order No. R5-2003-0175.

41. The existing groundwater monitoring wells were installed to characterize the groundwater underneath the ponds and DDA-1. Because the existing network will not measure the effects of the discharge to DDA-2, this Order requires that additional groundwater monitoring wells be installed and monitored within and around DDA-2.

42. Background groundwater quality, based on MW-7, is as follows: specific conductivity of 521 µmhos/cm, TDS of 383 mg/L, chloride of 14 mg/L, sulfate of 76 mg/L and total nitrogen of 1.4 mg/L. These values are average concentrations based on four quarters of monitoring data, which is not enough data to perform a true statistical analysis. Because the data from the initial sampling event at MW-7 is not representative of the groundwater conditions, these results were not

included in the average. These background values will need to be re-evaluated and may be revised after the Discharger performs a minimum of eight quarters of groundwater sampling from MW-7 and determines final background concentrations using statistical methods.

43. The water supply well that serves the winery is screened from 325 to 365 feet bgs and is constructed with a 50-foot sanitary seal. As stated earlier, the supply water is treated using an ozone injection system and multimedia filtration. A groundwater sample was collected from the water supply well (after ozonation) in July 2003 and analyzed for several constituents. Water supply samples were also collected during a four-week period in October and November 2005. Results are as follows:

| Constituents | Units | 2003 Water Supply Well | 2005 Water Supply Well |
|---|---|---|---|
| pH | pH units | 7.7 | 7.3 – 7.4 |
| Specific Conductivity | $\mu$mhos/cm | 680 | 570 - 840 |
| Total Dissolved Solids | mg/L | 410 | Not analyzed |
| Chloride | mg/L | 7.7 | 5 - 26 |
| Sodium | mg/L | 33 | Not analyzed |
| Sulfate as $SO_4$ | mg/L | 80 | Not analyzed |
| Nitrate as Nitrogen | mg/L | 0.34 | Not analyzed |
| Total Kjeldahl Nitrogen | mg/L | 2.7 | Not analyzed |

## SITE SPECIFIC CONDITIONS

44. The winery facility is near a hillside knoll above the wastewater ponds and the vineyards. Storm water is collected through drop inlets within the gravel parking lot and the grape unloading area. A drainage ditch located on the uphill side of Pond No. 1 is used to redirect surface water runoff away from the ponds.

45. Based on information obtained from the Soil Survey of Lake County, the soils underlying the wastewater ponds consist of Maxwell clay loam, Henneke-Montara Rock outcrop complex and Bressa-Millsholm loams. The Maxwell clay loam is a poorly drained alluvium. The Henneke-Montara Rock complex is an excessively drained soil formed in material weathered from serpentinitic rock, while the Bressa-Millsholm loam is a moderately deep and well drained soil formed from weathered sandstone.

46. Six test pits were excavated to depths ranging from 4.5 to 6 feet bgs within DDA-2 to evaluate the soil profile within this area. The soils encountered in the test pits consisted of low to medium plasticity silty sandy clay and clayey silt to 6-feet bgs. The upper 8 to 12-inches of the soil profile is characterized by a heavy root and organic zone.

47. The 100-year annual precipitation at Middletown, adjusted to Guenoc Ranch, is between 61.5 and 67 inches (extrapolated from two different weather stations in the area) with the highest rainfall (13.3 inches) occurring in January. An annual precipitation value of 67 inches was used as an input parameter in the water balance.

48. Evapotranspiration rates for the area range from 1.5 to 13.2 inches per month, with the highest rate occurring in July.

49. The facility is within the Upper Putah Creek Hydrologic Area (No. 512.30), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

50. Beginning in the summer of 2003, sanitary/domestic wastewater from the winery kitchen, winery restroom facilities, and a private residence is collected and disposed of separately from the process winery wastewater in an on-site sewage disposal system. This system is regulated by the Lake County Environmental Health Department.

51. A two acre pond west of the winery is used exclusively for fire suppression purposes and is not part of the winery wastewater collection system.

## SPECIAL CONSIDERATIONS FOR HIGH STRENGTH ORGANIC WASTE

52. Excessive application of high-strength organic wastewater to designated disposal areas can create objectionable odors and degradation of the underlying groundwater by overloading the shallow soil profile and causing waste constituents (organic carbon, nitrate, other salts, and metals) to percolate below the effective treatment zone. Additionally, reducing conditions caused by the excessive application of degradable organic matter can mobilize iron and manganese from the soil to groundwater. However, because the Discharger is treating and diluting the wastewater prior to applying it to DDA-2, objectionable odors and degradation of the groundwater should not be a concern in the disposal area, if the discharge is properly managed.

53. According to *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency (US EPA Publication No. 625/3-77-0007) (hereafter *Pollution Abatement*), when applying food-processing wastewater to land for biological treatment, the loading of $BOD_5$ should not exceed 100 lbs/acre/day (as a cycle average) to prevent nuisance odors. This Order implements this recommendation.

54. Acidic and/or reducing soil conditions can be detrimental to land treatment system function, and may also cause groundwater degradation. If the buffering capacity of the soil is exceeded and soil pH decreases below 5 or the soil becomes reducing, naturally occurring metals (including iron and manganese) may dissolve and degrade underlying groundwater. *Pollution Abatement* recommends that water applied to crops have a pH within 6.4 to 8.4 to protect crops. This Order implements this recommendation.

## BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

55. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* revised September 2004 (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control

Board. Pursuant to §13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.

56. Surface water drainage is to Bucksnort Creek, which is a tributary to Putah Creek, which is tributary to Lake Berryessa.

57. The Basin Plan designates the beneficial uses of Lake Berryessa as municipal and domestic supply; agricultural supply; power generation; water contact recreation; noncontact water recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction and/or early development of warm freshwater aquatic organisms; and wildlife habitat.

58. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

59. State Water Board Resolution No. 68-16 prohibits the degradation of groundwater quality 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 cause exceedance of one or more water quality objectives; and

    d. The discharger employs best practicable treatment and control to minimize degradation.

    The Discharger has not provided the required demonstration pursuant to State Board Resolution No. 68-16 to be allowed to cause groundwater degradation, and therefore none is authorized.

**WASTE CHARACTER AND WASTE MANAGEMENT UNIT CLASSIFICATION**

60. Water Code Section 13173 defines "designated waste" to include "[n]on harzardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations that exceed applicable water quality objectives or that could reasonably be expected to affect beneficial uses of waters of the state as contained in the appropriate state water quality control plan."

61. Based on the data characterization summarized in the Findings of this Order, several of the individual waste streams and the combined waste stream from the Bioreactor is classified as designated waste due to the concentration of total dissolved solids and individual constituents that exceed limits implementing applicable water quality objectives. The waste may also be classified as designated due to the fact that it has already polluted groundwater. The Discharger plans to segregate the water softener brine and treat the remaining wastewater. While such changes will reduce the salinity of the waste stream, it will not be reduced enough to prevent designated waste from being discharged to land.

62. The Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, California Code of Regulations (hereafter Title 27), Section 20240 states that waste management units shall be classified according to their ability to contain wastes, and that

such classification shall consider the site-specific circumstances relating to the unit's ability to protect water quality.

63. The Discharger's waste management system is subject to classification under Section 20240 at each point of release of waste constituents, including any structure where the waste is contained for conveyance, treatment, storage, or disposal. This includes floor drains, sumps, and any storage unit such as a tank or pond. The structure that defines each point of potential release must either be constructed to comply with Title 27 or be exempted from it.

64. Title 27, Section 20090(i) exempts fully enclosed units of limited aerial extent and of reliable structural integrity (e.g., aboveground tanks, reinforced concrete sumps, and stainless steel sumps). The wastewater sumps and the vault at the facility are constructed of reinforced concrete. The Bioreactor tanks are either steel or plastic tanks, and are designed and manufactured for that purpose. The indoor process equipment is housed in a roofed building with a reinforced concrete floor. All of these features are of limited aerial extent and provide structural integrity that qualifies them for exemption from the prescriptive standards and performance goals of Title 27. Containment of designated waste in the fully enclosed units described above is authorized under this Order provided that the units are operated and maintained to provide full and continuous containment for all designated waste.

65. The five unlined ponds are currently used to treat and dispose of liquid designated waste. However, pursuant to Section 20210 of Title 27, such waste can only be discharged to a Class I or Class II surface impoundment equipped with engineered lining and a leachate collection and recovery system. The Discharger has proposed to abandon the five existing ponds in place and to construct a new lined pond. Based on the effluent concentration of the wastewater, the depth to groundwater, and the quality of the background groundwater, the new pond must be designed and constructed to comply with Title 27.

66. The discharge of blended wastewater and irrigation water to DDA-2 is exempt from the requirements of Title 27. The exemption, pursuant to Section 20090(b), is based on the following:

    a. The Regional Board is issuing waste discharge requirements,

    b. The discharge complies with the Basin Plan, and

    c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.

67. State regulations prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. The data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the groundwater protection requirements specified in this Order.

68. Data from monitoring wells MW-2 through MW-7 show that groundwater exceeds the Groundwater Limitations, and is in conflict with State Water Board Resolution No. 68-16. The quality of wastewater proposed to be discharged to the new Pond A exceeds water quality objectives for certain waste constituents. As found in the previous WDRs and reiterated in this Order, the data demonstrates that waste discharge to the ponds has caused violations of water

quality objectives. In 2003, the discharge to the ponds was classified as a discharge of designated waste, and the Discharger was provided with a time schedule to line the pond per Title 27 or reduce the concentrations of the waste constituents entering the ponds such that designated waste is no longer discharged. While the Discharger has submitted a RWD proposing treatment of the waste, the resulting effluent is still considered designated waste, due to constituent concentrations significantly in excess of applicable water quality objectives. As such, Pond A does not qualify for exemption from the requirements of Title 27 pursuant to Section 20090(b), because the discharge is not in compliance with the Basin Plan. The pond also lacks the structural integrity to qualify for exemption from Title 27 pursuant to Section 20090(i). Therefore, the new Pond A must be regulated under Title 27.

69. The discharge of waste has resulted in an exceedance of water quality objectives and groundwater limitations for groundwater, and therefore, pursuant to Section 13304 of the California Water Code, the Discharger must implement the cleanup and abatement procedures set forth in State Board Resolution No. 92-49.

70. Because the Discharger cannot immediately cease the discharge of designated waste in violation of this Order, and because groundwater monitoring shows that the Discharger cannot immediately comply with the Groundwater Limitations of this Order, it is appropriate to adopt a companion Cease and Desist Order that sets forth a scope and schedule for work that will bring the Discharger into compliance within a reasonable period.

## OTHER REGULATORY CONSIDERATIONS

71. Section 13267(b) of California Water Code provides that: *"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, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters 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 No. ___" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges waste subject to this Order.

72. California Department of Water Resources standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), are 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.

73. Federal regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124). The State Board adopted Order No. 97-03-DWQ (General Permit No. 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. The Discharger has obtained coverage under General Permit No. CAS000001.

74. The action to update waste discharge requirements for Guenoc Winery, Inc. is exempt from the provisions of the California Environmental Quality Act, in accordance with Title 14, CCR, Section 15302 (c).

75. Pursuant to California 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. Failure to provide best practicable treatment and control, preclude conditions that threaten pollution, degradation, or nuisance; and protect groundwater quality will be a sufficient reasons to enforce this Order, modify it, or revoke it and prohibit further discharge.

## PUBLIC NOTICE

76. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.

77. The Discharger and interested agencies and persons were notified of the intent to prescribe WDRs for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

78. In a public meeting, all comments pertaining to the discharge were heard and considered.

**IT IS HEREBY ORDERED** that pursuant to Sections 13263 and 13267 of the California Water Code, Order No. R5-2003-0175 is rescinded and Guenoc Winery, Inc., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following:

*Note:*

1. *Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.*

2. *Additional compliance requirements are set forth in Cease and Desist Order No. R5-2006-0038.*

*3. The Title 27 WDRs for Pond A will contain additional prohibition, specifications, and provisions. Upon adoption of that Order, any requirements contained in this Order which pertain specifically and only to the wastewater pond(s) will be superceded by the requirements in the Title 27 WDRs.*

## A. Discharge Prohibitions:

1. Effective **1 July 2007**, the discharge of designated waste to any wastewater pond that is neither exempt from Title 27 nor designed, constructed, and permitted to comply with the prescriptive standards and performance goals of Title 27 is prohibited.

2. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

3. Operation of a distillery at the facility is prohibited.

4. Bypass or overflow of untreated or partially treated waste is prohibited. As of **1 September 2006**, bypass of the Bioreactor is prohibited.

5. Discharge of waste classified as "hazardous," as defined in Section 2521(a) of Title 23, CCR and Section 2510, et seq. (hereafter Chapter 15) is prohibited.

6. The discharge of winery wastewater to the domestic wastewater system is prohibited.

7. The discharge of domestic waste to the process wastewater treatment system is prohibited.

8. Discharge of wastewater to DDA-1 after **1 September 2006** is prohibited.

9. The disposal of water softener backwash brine to the winery wastewater treatment system or the domestic wastewater system is prohibited.

10. Discharge of sludge from the Bioreactor or from the wastewater ponds to DDA-2 is prohibited unless the Discharger submits, and the Executive Officer approves, the report described in Provision No. G.1.a.

11. Land application of wastewater to any field that does not have a fully functional tailwater return and runoff control system is prohibited.

## B. Discharge Specifications:

1. The monthly average discharge of wastewater from the Bioreactor into Pond A during the non-crush season shall be approximately 6,800 gpd. Higher monthly average flows are allowed during the crush season (generally August through October), as long as the total yearly flow does not exceed 2,380,000 gallons.

2. Effective **1 October 2006** the Bioreactor described in Finding Nos. 14 and 18 shall be installed and fully functional. As of this date, wastewater shall be treated in the Bioreactor prior to discharge to any pond.
3. Disposal of effluent shall be confined to the wastewater pond(s) and to DDA-2 as allowed by this Order and the Cease and Desist Order. Prior to 1 September 2006, wastewater may also be discharged to DDA-1.

4. Neither the treatment nor the discharge shall cause a condition of nuisance or pollution as defined by the California Water Code, Section 13050.

5. The discharge shall not cause the degradation of any water supply.

6. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.

7. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.

8. As a means of discerning compliance with Discharge Specification No. 7, the dissolved oxygen content in the upper zone (one foot) of all five wastewater ponds shall not be less than 1.0 mg/L.

9. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

10. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.

11. The wastewater treatment system and designated disposal area(s) shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

12. The wastewater treatment, storage, and land application system shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation. 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. Additional storage requirements may be prescribed for Pond A in the Title 27 WDRs.

13. The freeboard in the wastewater ponds shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.

14. By **1 November** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 12 and No. 13.

15. The ponds shall be managed to prevent the breeding of mosquitoes and other vectors. In particular,

    a. Erosion control measures shall be implemented to minimize small coves and irregularities around the perimeter of the waste surface.
    b. Weeds within and around the perimeter of the pond shall be minimized through control of water depth, harvesting, and/or herbicides.
    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

16. If the annual vault inspection (required in the Monitoring and Reporting Program) finds that wastewater is leaking from the vault, then within **30 days** of such determination, the Discharger shall make all repairs necessary to prevent such leakage.

## C. Effluent Limitations:

**1.** Wastewater discharged to ~~Pond A (or the existing wastewater ponds prior to construction of Pond A) and to~~ DDA-2 shall not exceed the following *monthly average effluent limits*~~, or any lower limits necessary to comply with the Groundwater Limitations~~:

| Constituent | Units | ~~Discharge to Pond A~~ | Discharge to DDA-2 [1] |
|---|---|---|---|
| Biochemical Oxygen Demand | mg/L | ~~180~~ | 90 |
| Total Dissolved Solids | mg/L | ~~900~~ | 450 |
| ~~Total Suspended Solids~~ | ~~mg/L~~ | ~~60~~ | ~~50~~ |
| ~~Total Kjeldahl nitrogen~~ | ~~mg/L~~ | ~~10~~ | ~~5~~ |
| pH | mg/L | ~~6.8 – 7.2~~ | 6.0~~8 – 9.57.2~~ |
| Chloride | mg/L | ~~18~~ | **9**~~2~~.6 |

[1] ~~Measured as the blended~~ **Applies to the blend of** wastewater and supplemental irrigation water.

**2. The total nitrogen applied to the DDA-2 from all sources shall not exceed an annual maximum of 50 pounds per acre per year. Compliance with this requirement shall be determined using the formula listed below:**

$$M = \left( \sum_{i=1}^{n} \frac{C_i \times V_i \times 8.345}{A} \right) + \left( \frac{M_{fertilizer} + M_{pomace} + M_{sludge}}{A} \right)$$

**Where M = total annual nitrogen mass in pounds per acre per year (lb/ac/yr);**

**$C_i$ = total nitrogen monitoring results for calendar month i in mg/L;**

**$V_i$ = total effluent discharged to the field during calendar month i in MG;**

**A = area of the field irrigated in acres,**

**i = the number of the month (i.e., January = 1, February = 2, etc.);**

**n = 12;**

**$M_{xxxx}$ = total annual mass from any other source (i.e., fertilizer, pomace/DE, and pond sludge, as applicable) in pounds; and**

**Total nitrogen = (nitrate as nitrogen + TKN) in mg/L**

**D. Designated Disposal Area Requirements:**

1. Wastewater may only be used to irrigate pasture (DDA-1 or DDA-2) as long as the Discharger complies with Discharge Specification No. D.9 and with the staff's calculated loading rates listed in Finding No. 28.

2. Hydraulic loading of wastewater and supplemental fresh water to the disposal areas shall be at rates designed to minimize percolation of waste constituents below the evaporative zone, except as needed to promote surface soil chemistry that is consistent with sustainable agricultural land uses.

3. Crops shall be grown on the designated disposal areas. Crops shall be selected based on nutrient uptake capacity, tolerance of anticipated soil conditions, water needs, and evapotranspiration rates. All crops shall either be grazed or they shall be harvested and removed from the irrigation areas at least once per year.

4. The maximum $BOD_5$ loading to each land application area irrigation check shall not exceed any of the following:

   a. 200 lbs/ac on any single day;

   b. 100 lbs/ac as a cycle average; and

   c. The daily and cycle loading rate that ensures compliance with Discharge Specifications B.4 and B.7 and with the Groundwater Limitations.

   Loading calculations shall be performed as specified in the attached Monitoring and Reporting Program No. R5-2006-0037, which is a part of this Order.

5. The irrigation system shall be designed and managed to ensure even application of wastewater over each check or field.

6. Discharge of process wastewater, including runoff, spray or droplets from the irrigation system, shall not occur outside the boundaries of the designated disposal area.

7. Irrigation of wastewater using spray irrigation methods is prohibited when wind velocities exceed 30 mph.

8. Application of wastewater shall only occur where checks are graded to provide uniform water distribution, minimize ponding, and provide complete tailwater control.

9. Irrigation with wastewater shall not be performed within 24 hours before a predicted precipitation event, during precipitation, or within 24 hours after any precipitation event, nor shall it be performed when ground is saturated.

10. Hydraulic loading of process wastewater and irrigation water shall be at reasonable agronomic rates designed to maximize uptake and breakdown of waste constituents in the root zone and minimize the percolation of waste constituents below the root zone.

11. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile.

12. Wastewater conveyance lines shall be clearly marked as such. Process wastewater controllers, valves, etc. shall be affixed with reclaimed water warning signs, and these and quick couplers and sprinkler heads shall be of a type, or secured in such a manner, that permits operation by authorized personnel only. If wastewater and irrigation water utilize the same pipeline, then backflow prevention devices shall be installed to protect the potable water supply.

13. No physical connection shall exist between wastewater piping and any domestic water supply or other domestic/industrial supply well without an air gap or approved reduced pressure device.

14. Public contact with wastewater shall be precluded through such means as fences, signs, and irrigation management practices. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of the designated disposal areas to alert the public of the use of wastewater.

15. The designated disposal areas shall be managed to prevent breeding of mosquitoes and other vectors. In particular:

    a. There shall be no standing water on the irrigation parcel areas 24 hours after effluent application to a parcel ceases;
    b. Ditches must be maintained essentially free of emergent, marginal, and floating vegetation, and;
    c. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store effluent.

16. A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigation used for process wastewater effluent disposal.

17. A 100-foot buffer zone shall be maintained between any spring, domestic well or irrigation well and the wetted area produced during irrigation used for process wastewater effluent disposal.

## E. Solids/Sludge Disposal Requirements:

1. Water softener backwash brine shall be stored in a manner that will not impact the underlying groundwater, and must be periodically hauled off-site for disposal at an appropriately permitted facility.

2. Collected screenings, sludge, and other solids removed from winery wastewater shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations of Treatment, Storage, Processing, or Disposal of Solid Waste,* as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005 et seq.

3. Winery sludge and other solids shall be removed from the process equipment, sumps, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Winery solids drying operations, if any, shall be designed and operated to prevent leachate generation.

4. Storage and disposal of domestic wastewater sludge (septage) shall comply with existing Federal, State, and local laws and regulations, including permitting requirements and technical standards.

5. Sludge and other solids shall be removed from the wastewater ponds on an as needed to ensure optimal operation and adequate hydraulic capacity. Sludge and solids removal shall be accomplished in a manner that ensures the continued integrity of liners and leachate collection systems. Sludge shall be hauled by an authorized carrier.

6. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer at least 90 days in advance of the change.

## F. Interim Groundwater Limitations:

The discharge of wastewater shall not cause underlying groundwater to contain waste constituents in concentrations greater than background water quality, as set forth below. These values will be re-evaluated and may be revised after the Discharger submits the *Background Groundwater Quality Determination Report* proposing final background concentrations using appropriate statistical methods.

| Constituent | Units | Concentration |
|---|---|---|
| Electrical conductivity | mg/L | 525 |
| Total dissolved solids | mg/L | 385 |
| Chloride | mg/L | 14 |
| Sulfate | mg/L | 80 |
| Total nitrogen | mg/L | 2 |

## G. Provisions:

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described in Provision G.2.

   a. At least **90 days** before the Discharger wishes to apply sludge from the Bioreactor and/or wastewater ponds to DDA-2, it must submit a *Waste Loading Report* describing the total nutrient and salt loading onto DDA-2 and whether the addition of the sludge will cause a violation of the Groundwater Limitations. The report shall consider the nutrients and salts contained in the fertilizer, liquid wastewater, pomace, and irrigation water applied to DDA-2 and shall clearly show the incremental increase attributable to the sludge.

   b. By **1 July 2006,** the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan*. The workplan shall describe the proposed installation of groundwater monitoring wells within and around DDA-2 to adequately characterize the groundwater quality within and downgradient of the disposal area. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment D, which is attached hereto and made part of this Order by reference.

   c. By **1 September 2006**, the Discharger shall submit a *DDA-2 Modification Report* that shows that the berms surrounding DDA-2 have been installed and tailwater/runoff control systems are functional such that discharge of wastewater will comply with this Order.

   d. By **1 December 2006**, the Discharger shall submit and implement an *Operation and Management Plan* (O&M Plan) that addresses operation of the wastewater treatment and disposal facility. At a minimum, the O&M Plan will describe (a) the daily operation and maintenance of the treatment system, (b) the practices used to treat the wastewater within limits specified in this Order, (c) the locations of the designated disposal areas, and procedures used for the disposal of wastewater to these areas to prevent excessive BOD, nitrogen, and salt over the loading limits specified in this Order, (d) procedures to be used to determine when the valves at the bottom end of DDA-2 may be opened to allow storm water to run off the fields, (e) the locations of flow and effluent sampling points, (f) quality control sampling procedures necessary to obtain representative samples, (g) practices used to maintain the designated disposal areas, and (h) the locations of the solid waste storage and disposal areas, methods of disposal, and the daily practices associated with the disposal of the solid waste. A copy of the O&M Plan shall be kept at the facility for reference by operating personnel and they shall be familiar with its contents.

   e. By **1 December 2006,** the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment D.

f. By **1 March 2007**, the Discharger shall submit a *Background Groundwater Quality Determination Report*. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data, a calculation of the concentration in background monitoring well(s), and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly groundwater monitoring events from MW-7, beginning with the first quarter of 2005.

2. All technical reports 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 §6735, 7835, and 7835.1. To demonstrate compliance with §415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports 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.

3. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2006-0037, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

5. In the event of any change in control or ownership of the facility or land disposal areas, 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 this office. 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 Regional 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 California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

6. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then

the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.

7. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to §313 of the "Emergency Planning and Community Right to Know Act of 1986."

8. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.

9. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.

10. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

11. The Regional Board will review this Order periodically and will revise requirements when necessary.

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 **8 June 2012**.

Original signed by

PAMELA C. CREEDON, Executive Officer

**Amended by Order R5-2012-0067**
**LLA:060812**