

9. The direct discharge of wastewater to the tailwater basin or the stormwater basin is prohibited.

**B. Discharge Specifications:**

1. The monthly average discharge to the LAAs shall not exceed 160,000 gallons per day and an annual total of 48,000,000 gallons of wastewater or stormwater mixtures.
2. Stormwater discharged to the stormwater basin shall not have an electrical conductivity value greater than 500 umhos/cm. Before initiating use of the stormwater basin, the Discharger shall have submitted a Stormwater Pollution Prevention Plan to the Regional Board for approval and received authorization from the Executive Officer to proceed. The Stormwater Pollution Prevention Plan shall include all elements set forth in Order No. 97-03-DWQ, Discharges of Storm Water Associated with Industrial Activities, Section A: Storm Water Pollution Prevention Plan Requirements, as amended or reissued by the State Water Board ("Section A"). However, if the Discharger files a Notice of Non-Applicability, the Discharger is not required to comply with Item 10 of Section A, or any other provisions of Section A that the Executive Officer determines are inapplicable to the discharge.
3. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the CWC, Section 13050.
4. The discharge shall not cause the degradation of any groundwater.
5. 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.
6. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the property owned by the Discharger.
7. Sufficient dissolved oxygen must be maintained in the upper zone (one foot) of any stormwater or tailwater basin in order to prevent objectionable odors.
8. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
9. All basins shall be managed to prevent the breeding of mosquitoes. In particular,
  - a. An erosion control program shall assure that small coves and irregularities are not created around the perimeter of the waste surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.
  - c. Algae, vegetation, and debris shall not accumulate on the water surface.
10. The LAAs shall be managed to prevent the breeding of mosquitoes.

11. The wastewater treatment and land application system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
12. No physical connection shall exist between wastewater piping and any domestic water supply, domestic/industrial supply well, irrigation water pipeline, or irrigation canal without an air gap or approved reduced pressure device.
13. The freeboard in the tailwater basin shall never be less than two feet, as measured vertically from the water surface to the lowest point of overflow.
14. The wastewater treatment and land application system shall have sufficient capacity to accommodate wastewater flow and 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.
15. On or about **15 October** each year, available tailwater basin storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 13 and No. 14.

16. Storage of pomace and/or diatomaceous earth on areas not equipped with means to prevent stormwater infiltration, or a paved leachate collection system is prohibited.
17. Application of pomace and/or diatomaceous earth to LAAs at the winery is prohibited.
18. All water softening ion exchange regeneration brine shall be separated from the wastewater system and disposed of at East Bay Municipal Utility District or a similar facility.

**C. Effluent Limitations:**

1. Wastewater applied to land shall not exceed the following monthly average effluent limits, or other concentrations as determined in accordance with Provision G.1.g and G.1.h to ensure compliance with the Groundwater Limitations:

<u>Constituent</u>	<u>Units</u>	<u>Concentration Limits</u>			
		<u>4/23/09</u>	<u>2/1/11</u>	<u>2/1/12</u>	<u>2/1/13</u>
Fixed Dissolved Solids	mg/L	2,000	1,500	1,200	750

2. Wastewater applied to land shall not exceed the following loading rates, or other loading rates as determined in accordance with Provision G.1.g and G.1.h to ensure compliance with the Groundwater Limitations:

<u>Constituent</u>	<u>Units</u>	<u>7-day Average</u> <sup>1</sup>
BOD	lbs/ac·day	500

<sup>1</sup>The 7-day average represents the total loading rate divided by 7. LAAs shall rest at least 7 days between wastewater applications.

3. Wastewater discharged to the LAA shall not have a pH of less than 4.5 or greater than 10.0.

**D. Land Application Area Requirements:**

1. The discharge shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications and Effluent Limitations.
2. Crops shall be grown on the LAAs. Crops shall be selected based on nutrient uptake capacity, tolerance to high soil moisture conditions, consumptive use of water, and irrigation requirements. Cropping activities shall be sufficient to take up the nitrogen applied, and crops shall be harvested and removed from the land at least on an annual basis.
3. Neither pomace nor DE shall be stored on unpaved ground. Acceptable alternatives include storage on the Pomace/DE pad, paved areas that are equipped with liquid collection systems, or other alternatives that prevent generation of leachate such as roofed areas or use of ag bags for well drained materials.
4. Discharge of wastewater, including runoff, spray or droplets from the irrigation system, shall not occur outside the boundaries of the approved LAA(s). Wastewater application using sprinklers, flood, or drip irrigation is acceptable if the discharge complies with all requirements of this Order.
5. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of wastewater and irrigation water below the root zone (i.e., deep percolation).
6. Wastewater conveyance lines shall be clearly marked as such. Wastewater controllers, valves, etc. shall be affixed with reclaimed water warning signs; quick couplers and sprinkler heads shall be of a type, or secured in such a manner, that permits operation by authorized personnel only.
7. Irrigation systems shall be labeled as containing reclaimed wastewater. If wastewater and irrigation water utilize the same pipeline, then backflow prevention devices shall be installed to protect the potable/irrigation water supply.
8. Application of wastewater to the LAA using sprinkler irrigation is prohibited when wind velocities exceed 30 miles per hour.
9. Public contact with wastewater shall be precluded through such means as fences, signs, and/or irrigation management practices. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of the LAA(s) to alert the public of the use of wastewater.
10. The LAA shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied water must infiltrate completely within 24 hours.
  - b. Ditches not serving as wildlife habitat shall be maintained free of emergent,

marginal, and floating vegetation.

- c. Low pressure pipelines, unpressurized pipelines, and ditches that are accessible to mosquitoes shall not be used to store wastewater.
11. A 50-foot buffer zone shall be maintained between any watercourse and the wetted area produced during irrigation used for wastewater disposal.
12. A 50-foot buffer zone shall be maintained between any industrial, domestic, or irrigation well and the wetted area produced during wastewater application.
13. Discharges to LAAs shall be managed to minimize both erosion and runoff from the irrigated area.
14. A berm shall be maintained around the exterior perimeter of the land application areas to prevent wastewater/stormwater runoff.
15. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile and shall not cause significant mobilization of soil constituents such as iron and manganese.
16. Application of wastewater to the LAA via flood irrigation shall only occur on furrows graded or irrigation checks configured so as to achieve uniform distribution, minimize ponding, and provide for tailwater control. Furrow runs and irrigation checks shall be no longer and slopes shall be no greater than what permits reasonably uniform infiltration and maximum practical irrigation efficiency.
17. Wastewater application areas shall be allowed to dry for at least 7 days from the end of wastewater application before the next wastewater application.
18. There shall be no standing water in the LAA 24 hours after wastewater is applied, except during periods of heavy rains sustained over two or more consecutive days.

**E. Solids/Sludge Disposal Requirements:**

1. Collected screenings, sludge, and other solids removed from winery wastewater shall be disposed of in a manner that is consistent with Title 27, Division 2, Subdivision 1 of the CCR and approved by the Executive Officer.
2. Winery sludge and other solids shall be removed from sumps, screens, 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.
3. 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.

4. Sludge and other solids shall be removed from septic tanks as needed to ensure optimal operation and adequate hydraulic capacity. A duly authorized carrier shall haul sludge, septage, and domestic wastewater.
5. 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. Groundwater Limitations:**

1. The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality. Monitoring well MW-1 provides background groundwater conditions for the southern portion of the facility, while monitoring well MW-6 provides background groundwater conditions for the northern portion of the facility. Background groundwater quality shall be calculated using the methods provided in Title 27 as described in Provision G.1.e. Background values must be updated annually as described in the MRP.

**G. Provisions:**

1. All of the following reports shall be submitted pursuant to CWC Section 13267, and prepared by a California registered professional as described in Provision G.2.
  - a. By **28 July 2009**, the Discharger shall either apply for coverage or submit a Notice of Non-Applicability for Order No. 97-03-DWQ, Discharges of Storm Water Associated With Industrial Activities.
  - b. By **28 July 2009**, the Discharger shall prepare and implement an *Operation and Management Plan (O&M Plan)* that addresses operation of the wastewater treatment and disposal system. 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 LAAs, and procedures to prevent excessive BOD, nitrogen, or dissolved solids loading of LAAs, (d) the locations of flow and sampling points, (e) quality control sampling procedures necessary to obtain representative samples, (f) practices used to maintain the LAAs, (g) the locations of the solid waste disposal areas, methods of disposal, and the daily practices associated with the disposal of the solid waste, (h) means to secure and control wastewater from discharging off-site (e.g., installation of fencing or notification signs, installation of berms to prevent runoff, reconfiguration of checks to improve application rates). The plan shall be updated annually until the facility expansion is complete. 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.
  - c. By **28 July 2009**, the Discharger shall submit a *Crop Uptake and Assimilative Capacity (CUAC) Workplan* to develop site specific loading rates that will be protective of groundwater quality. The CUAC Workplan shall assess the capacity

of the site to treat, remove, or otherwise assimilate wastewater constituents, primarily FDS and nitrogen. The workplan shall include a discussion of the fate and transport of wastewater constituents, and provide a means to determine loading rates that are protective of groundwater quality. The workplan shall include a schedule that includes two years of field testing in the LAAs. Any numerical model that will be used in the study shall be documented as described in the Regional Water Board's guidance available at:  
[http://www.waterboards.ca.gov/centralvalley/plans\\_policies/guidance/modeling.pdf](http://www.waterboards.ca.gov/centralvalley/plans_policies/guidance/modeling.pdf)

- d. **At least 90 days before initiating use of the stormwater basin**, the Discharger shall submit a *Stormwater Pollution Prevention Report (SWPPR)* that describes how the facility will be operated to prevent wastewater or wastewater/stormwater mixtures from being discharged to the stormwater basin. The report shall include a description of equipment designed to prevent such discharges.
  - i. If implementation of the SWPPR is not effective in preventing wastewater constituents from being discharged to the Stormwater basin, then upon request of the Executive Officer, the Discharger shall either discontinue use of the basin or line the basin with a synthetic liner to minimize infiltration of waste constituents. The MRP requires an annual evaluation of the Stormwater basin status.
- e. **By 21 August 2009**, the Discharger shall submit a *Background Groundwater Quality Standard Report*. The report shall present a summary of all monitoring data (including data obtained prior to adoption of this Order) and calculation of the concentration in background monitoring wells MW-1 and MW-6, for the constituents listed in Finding No. 48 of the WDRs. This determination of background groundwater quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least 12 consecutive groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare the measured concentration in each compliance monitoring well with the proposed background concentration.
- f. **By 19 November 2009**, the Discharger shall submit a *Potential Conduit Report* on the construction of production, fire-fighting, and domestic wells at the facility. The report shall include construction details, an evaluation of well conditions, and an evaluation of the potential for the wells to act as conduits for degraded quality groundwater to migrate to deeper aquifer zones. If construction details are not available, the well construction shall be investigated using a video-log or similar method. If the investigation reveals a potential for any well to act as a conduit, the Discharger shall submit a Well Abandonment Workplan within **90 days of submittal of the Potential Conduit Report** and a Well Destruction Completion Report within **90 days of submittal of the Well Abandonment Workplan**.
- g. **By 26 October 2011**, the Discharger shall submit a *Facility Upgrade Workplan* that includes the following:
  - i. An Antidegradation Study in accordance with State Water Board Resolution 68-16 (The Antidegradation Policy), the Basin Plan's Antidegradation

Implementation Policy, and the Basin Plan's Policy for Application of Water Quality Objectives.

- ii. The Results of the CUAC Study, including documentation of any groundwater models as described in Provision G.1.c. The CUAC Study shall provide support for determination of sustainable wastewater constituent loading rates that will not result in groundwater quality degradation including a sustainable crop uptake rate of FDS. Results of the CUAC Study will be used to establish final effluent limits as presented in Effluent Limitations C.1, C.2. and C.3.
    - iii. A design for wastewater source control, treatment, and/or segregation, including reductions of FDS that will allow the Discharger to comply with State Board Resolution No. 68-16.
    - iv. An Implementation Schedule for completing the work described above.
    - v. Prior to implementation of the Facility Upgrade Workplan, the Discharger shall obtain approval by the Executive Officer.
  - h. By **26 November 2012**, the Discharger shall submit a *Facility Improvement Report* that describes completion of the improvements described in the *Facility Upgrade Workplan*. The *Facility Improvement Report* shall compare the wastewater quality to the sustainable loading rates determined in Provision G.1.g.ii. If appropriate and protective of groundwater quality, the Discharger may request the effluent limit set in Effluent Limitations C.1, C.2, and/or C.3 be revised through a public hearing of the Regional Water Board.
2. 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, 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 contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.
  3. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2009-0039, 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 wastewater 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, 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 Water 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 Water 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 Section 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 Water 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 Water 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 24 April 2009.

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PAMELA C. CREEDON, Executive Officer



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2009-0038

FOR  
BARREL TEN QUARTER CIRLE LAND COMPANY  
BARREL TEN QUARTER CIRCLE, ESCALON CELLARS  
SAN JOAQUIN COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the influent wastewater, tailwater basin, stormwater basin, land application areas, solids, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Process wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

**EFFLUENT MONITORING**

Process wastewater samples shall be collected at the Process Water Sump (PW Sump). Effluent monitoring for the process wastewater system shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gallons	Continuous	Daily <sup>1</sup>	Monthly
Total Flow <sup>1</sup>	gallons	Continuous	Totalizer <sup>1</sup>	Monthly
pH	pH Units	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Biochemical Oxygen Demand <sup>2</sup>	mg/L	Composite	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Composite	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Composite	Monthly	Monthly
Total Dissolved Solids	mg/L	Composite	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Composite	Monthly	Monthly
Electrical Conductivity	umhos/cm	Composite	Monthly	Monthly
Sodium	mg/L	Composite	Monthly	Monthly

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Chloride	mg/L	Composite	Monthly	Monthly
Standard Minerals <sup>4</sup>	mg/L	Composite	Quarterly	Quarterly

<sup>1</sup> Continuous monitoring requires daily meter reading or automated data collection using a meter equipped with a totalizer. Total flow means the cumulative total for the calendar year.

<sup>2</sup> Five-day, 20° Celsius Biochemical Oxygen Demand.

<sup>3</sup> Composite samples shall be collected with a flow-weighted average sampling device.

<sup>4</sup> Standard minerals include the following: boron, calcium, iron, magnesium, manganese, potassium, sulfate, total alkalinity (including alkalinity series), and hardness.

### TAILWATER BASIN MONITORING

The tailwater basin shall be monitored whenever there is water in it. Samples shall be collected from an established sampling station located in an area that will provide representative samples of the water in the tailwater basin. Freeboard shall be measured vertically from the surface of the basin water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Monitoring of the basin shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Presence/Absence of Water	--	Observation	Weekly	Monthly
Dissolved Oxygen <sup>1</sup>	mg/L	Grab	Weekly	Monthly
Freeboard	feet (±0.1)	Measurement	Weekly	Monthly
pH	pH Units	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Electrical Conductivity	umhos/cm	Composite	Weekly	Monthly
Biochemical Oxygen Demand	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Sodium	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly

<sup>1</sup> Samples shall be collected at a depth of one foot, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

### STORMWATER BASIN MONITORING

The stormwater basin shall be monitored whenever there is water in it. Samples shall be collected from an established sampling station located in an area that will provide representative samples of the water in the basin. Freeboard shall be measured vertically from the surface of the basin water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Monitoring of the basins shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Presence/Absence of Water	--	Observation	Weekly	Monthly
Dissolved Oxygen <sup>1</sup>	mg/L	Grab	Weekly	Monthly
Freeboard	feet ( $\pm 0.1$ )	Measurement	Weekly	Monthly
pH	pH Units	Grab	Weekly	Monthly
Electrical Conductivity	umhos/cm	Grab	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly
Biochemical Oxygen Demand	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Sodium	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly
Sulfate	mg/L	Grab	Monthly	Monthly

<sup>1</sup> Samples shall be collected at a depth of one foot, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

### LAND APPLICATION AREA MONITORING

The Discharger shall monitor process wastewater discharged for irrigation to the land application area. Monitoring shall be conducted **daily during operation** and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for the land application areas shall be calculated. Monitoring of the land application areas shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Wastewater Flow <sup>1</sup>	Gallons	Continuous <sup>1</sup>	Daily	Monthly
Supplemental Irrigation Flow	Gallons	Calculated <sup>2</sup>	Daily	Monthly
Local Rainfall	Inches	Measurement	Daily	Monthly
Acreage Applied <sup>3</sup>	Acres	Calculated	Daily	Monthly
Application Rate	gal/acre·day	Calculated	Daily	Monthly
BOD Loading Rate <sup>4</sup>	lbs/acre·day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate <sup>5</sup>	lbs/acre·month <sup>6</sup>	Calculated	Monthly	Monthly
TDS Loading Rate	lbs/acre·month <sup>6</sup>	Calculated	Monthly	Monthly
FDS Loading Rate	lbs/acre·month <sup>6</sup>	Calculated	Monthly	Monthly
LAA Berm Condition	NA	Inspection	Monthly	Monthly
Crop Removal Mass	pounds	Measured	Monthly	Monthly

<sup>1</sup> Continuous monitoring requires daily meter reading or automated data collection and shall define the volume of wastewater discharged to the land application areas from the wastewater storage basin.

<sup>2</sup> Supplemental irrigation flow amounts and irrigation amounts shall be calculated.

<sup>3</sup> Land Application Area(s) in use shall be identified by name or number and the acreage provided. If a

- portion of an area is used, then the acreage shall be estimated.
- 4 Calculate the daily application rate and the 7-day average application rate.
- 5 Total nitrogen applied from all sources, including fertilizers and supplemental irrigation water if used.
- 6 Report monthly total and cumulative annual to date.

At least **once per week** when wastewater is being applied to the land application areas, the entire application area shall be inspected to identify any equipment malfunction or other circumstance that might allow irrigation runoff to leave the area and/or create ponding conditions that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facility and be submitted with the monthly monitoring reports. If wastewater was not applied to the land application area, then the monthly monitoring reports shall so state.

### SOLIDS MONITORING

The Discharger shall record and report monthly the quantity, drying location, storage location, disposal location, and method of disposal of solids disposed of during the processing season, as well as during the off-season, if applicable. If solid waste is shipped offsite, then an estimated amount and location of disposal shall be reported in the monthly report and the hauler identified.

The storage of any pomace or used diatomaceous earth shall be described. The description shall include the material stored, approximate amount stored, location of storage, and measures implemented to prevent leachate generation or control and dispose of any leachate that is generated.

### GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Wells Nos. MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, and MW-7) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Depth to Groundwater	±0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation <sup>1</sup>	±0.01 feet	Calculated	Quarterly	Quarterly
Gradient	feet/feet	Calculated	Quarterly	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly	Quarterly
pH	pH units	Grab	Quarterly	Quarterly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Fixed Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Electrical Conductivity	umhos/cm	Grab	Quarterly	Quarterly
Standard Minerals <sup>2,3</sup>	mg/L	Grab	Annually	Annually

<sup>1</sup> Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

<sup>2</sup> Standard Minerals shall include at least the following compounds: boron, calcium, iron, magnesium, manganese, potassium, sodium, chloride, sulfate, total alkalinity (including alkalinity series), and hardness

<sup>3</sup> Standard Minerals shall be analyzed in the fourth quarter of the year.

## REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., influent monitoring, groundwater monitoring well, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a registered professional engineer or geologist and signed by the registered professional.

### A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board by the **1<sup>st</sup> day of the second month** following the end of the reporting period (i.e. the January monthly report is due by 1 March). Monthly reports for the months of March, June, September, and December may be submitted as part of the Quarterly Monitoring Report, if desired. The monthly reports shall include the following:

1. Results of effluent, tailwater basin, stormwater basin, land application area, and solids monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program;
5. The cumulative volume of wastewater generated during the year to date;

6. The total pounds of total dissolved solids and fixed dissolved solids (year to date) that have been applied to the land application areas, as calculated from the sum of monthly loadings; and
7. The total pounds of nitrogen (year to date, from all sources including fertilizer) applied to the land application area as calculated from the sum of monthly loadings.
8. A summary of the quantity of solid waste (stems, pomace, diatomaceous earth, crops removed, etc.) generated and disposed of off-site.
9. A summary of the quantity of liquid waste (water softening ion exchange regeneration brine, wine treatment ion exchange regeneration brine, etc.) generated and disposed of off-site. Include a description of the disposal location for the material.

#### **B. Quarterly Report**

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Regional Board by the **1<sup>st</sup> day of the second month after the quarter** (i.e. the January-March quarter is due by May 1<sup>st</sup>) each year. The Quarterly Report shall include the following:

1. Results of groundwater monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

8. Copies of laboratory analytical report(s) for groundwater monitoring.

**C. Annual Report**

Annual Report shall be prepared as the December monthly monitoring report. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The contents of a regular December monthly monitoring report.
2. The contents of the regular quarterly monitoring report for the last quarter of the year.
3. Tabular and graphical summaries of all data collected during the year.
4. Tabular and graphical summaries of historical monthly total loading rates for wastewater generation, process water used for irrigation (hydraulic loading in gallons/acre and inches), total nitrogen, and total dissolved solids.
5. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), and groundwater monitoring data.
6. A summary of the vegetative material (crops) removed from the LAAs. The summary shall include harvest dates, crop type, disposal area, and estimated ash content of the harvest.
7. A summary of the quantity of solid waste (lees, stems, pomace, diatomaceous earth, etc.) generated and disposed of off-site.
8. An evaluation of the groundwater quality beneath the land application area.
9. Updated background groundwater values using data from Wells MW-1 and MW-6, using the data analysis methods described in Title 27.
10. An evaluation of the effectiveness of implementation of the SWPPR to prevent waste constituents from being discharged to the stormwater basin. The evaluation shall include a summary of data collected at the stormwater basin and an evaluation of groundwater quality trends at the stormwater basin.
11. A description of salinity reduction methods that have been implemented in the calendar year.
12. Estimated flows for the next calendar year.
13. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste

discharge requirements.

14. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

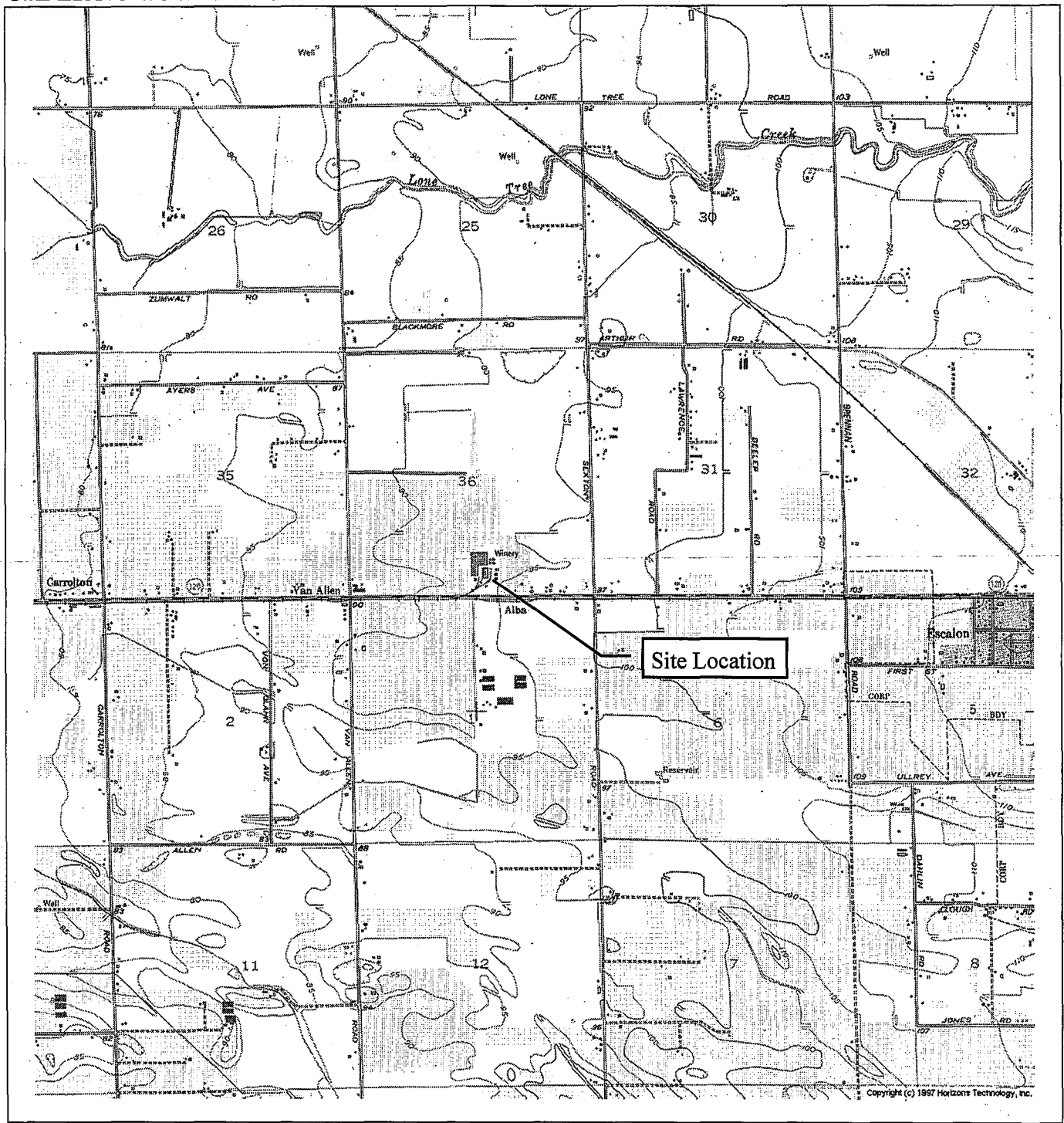
The Discharger shall implement the above monitoring program as of the date of this Order.

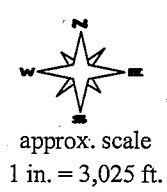
Ordered by: \_\_\_\_\_  
PAMELA C. GREEDON, Executive Officer

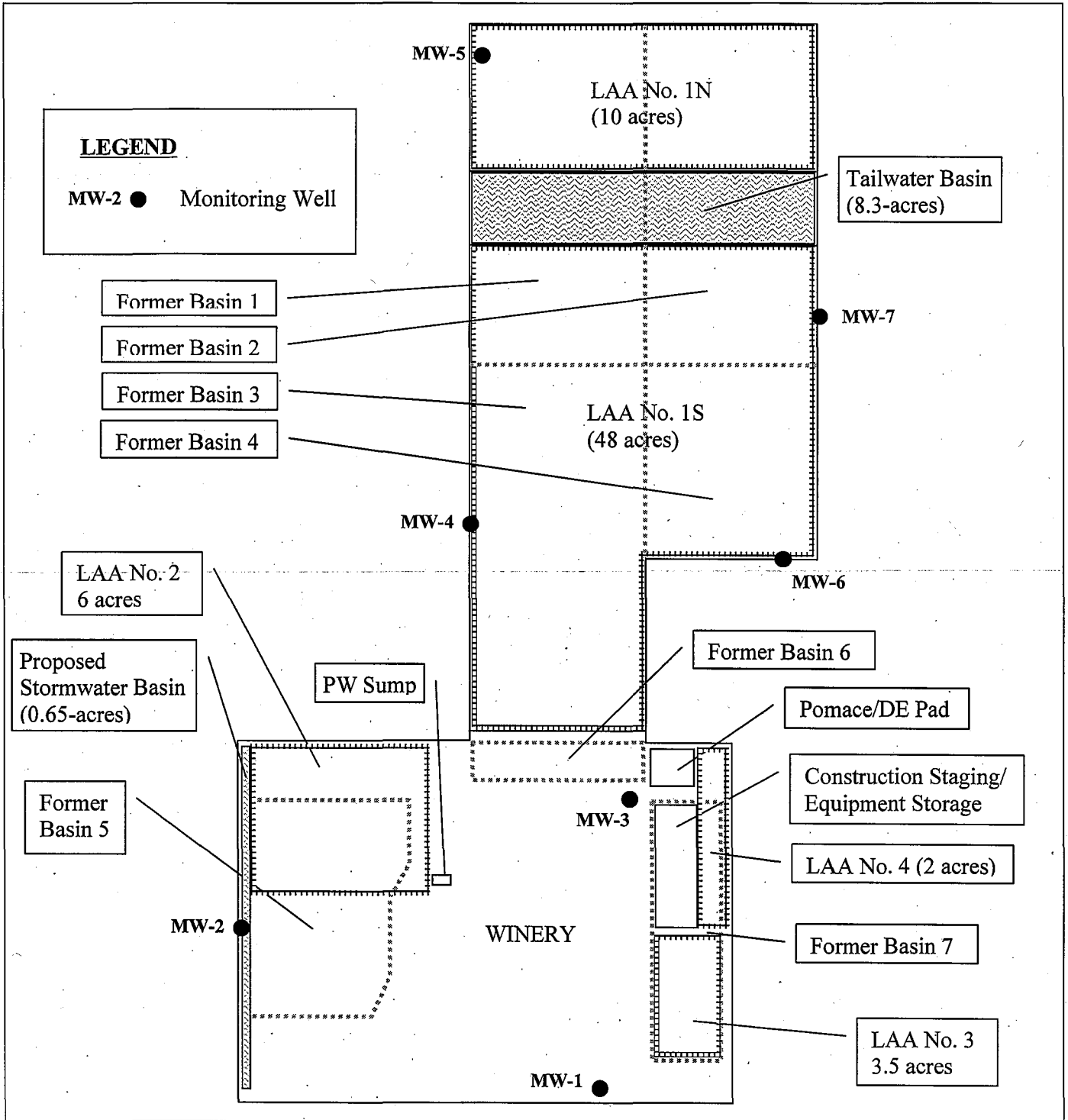
\_\_\_\_\_  
24 April 2009  
(Date)

TRO: 3/20/09





<p><b>Drawing Reference:</b></p> <p>U.S.G.S TOPO MAP 7.5 MINUTE QUAD</p>	<p><b>SITE LOCATION MAP</b></p> <p>BARREL TEN QUARTER CIRCLE, ESCALON CELLARS 21801 HIGHWAY 120, ESCALON, SAN JOAQUIN COUNTY</p>	 <p>approx. scale 1 in. = 3,025 ft.</p>
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**Drawing Reference:**

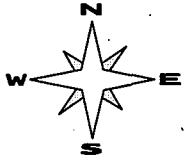
Modified from Figures 4 - 5  
 Report of Waste Discharge  
 Kennedy/Jenks Consultants,  
 15 March 2002

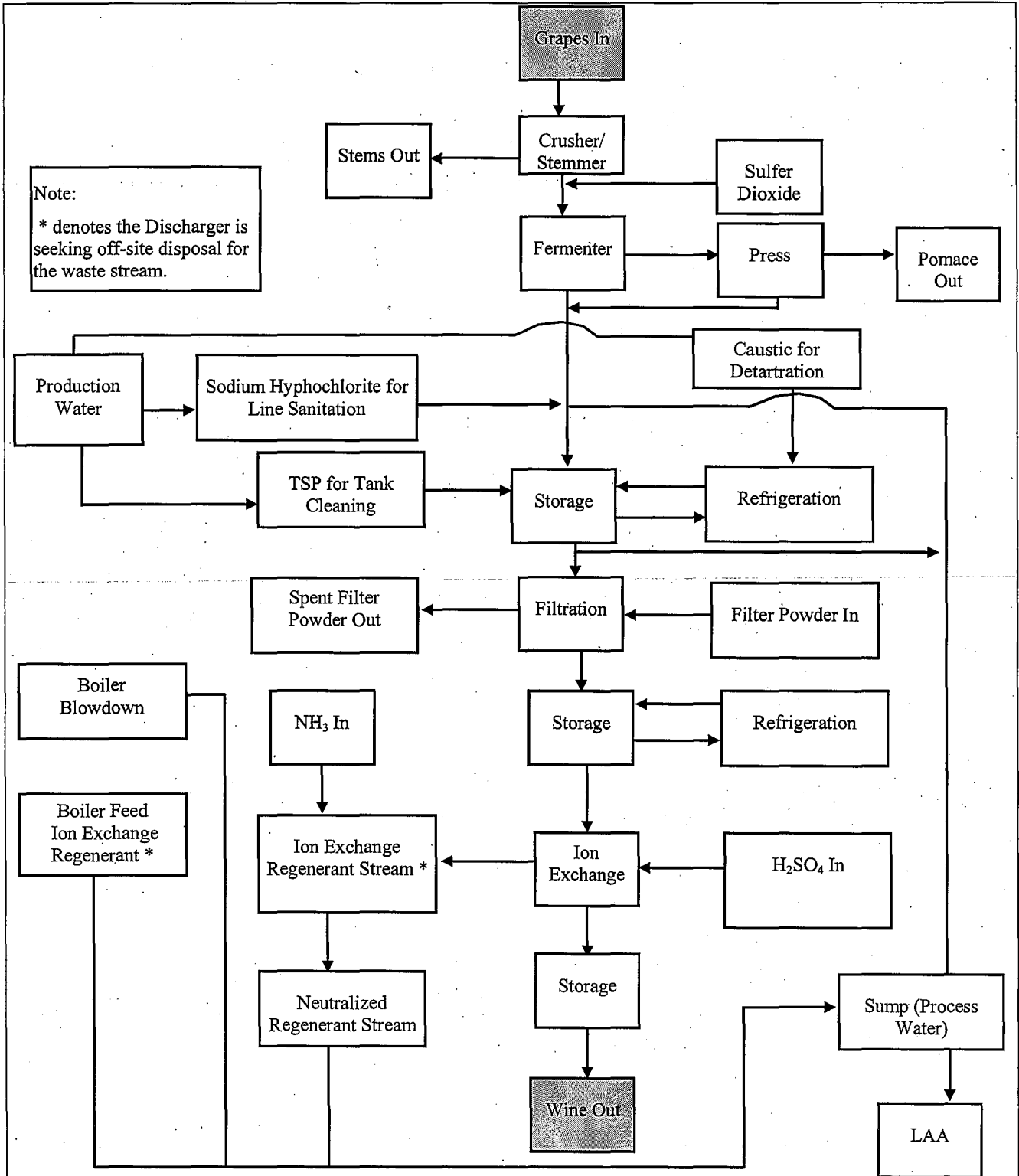
**SITE PLAN**

BARREL TEN QUARTER CIRCLE,  
 ESCALON CELLARS  
 21801 HIGHWAY 120, ESCALON  
 SAN JOAQUIN COUNTY

**ORDER NO. R5-2009-0038**

**ATTACHMENT B**

		<p>1 in <math>\approx</math> 530 ft</p> 
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Drawing Reference:

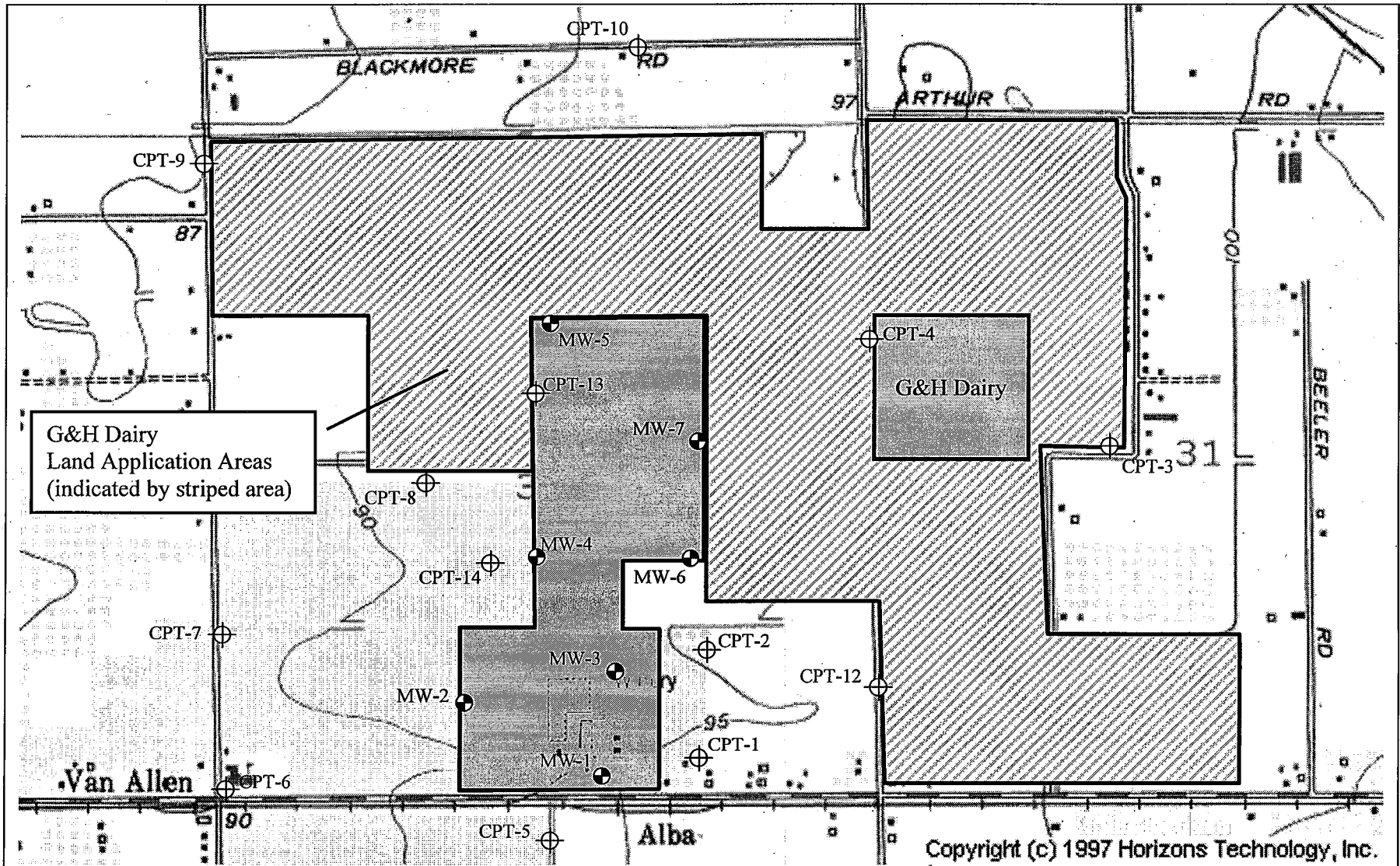
Figure 1, RWD 9/05  
Kennedy Jenks Consultants

**WASTEWATER FLOW DIAGRAM**

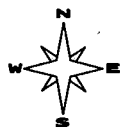
BARREL TEN QUARTER CIRCLE, ESCALON CELLARS  
ESCALON, SAN JOAQUIN COUNTY

ORDER NO. R5-2009-0038

ATTACHMENT C



Approximate Scale  
1 in = 1,050 ft.



Drawing Reference:  
Modified from USGS Topo and  
Figure 22, *Groundwater  
Characterization*, May 2007

**SITE VICINITY**

BARREL TEN QUARTER CIRCLE, ESCALON CELLARS  
ESCALON, SAN JOAQUIN COUNTY

## INFORMATION SHEET

ORDER NO. R5-2009-0038  
BARREL TEN QUARTER CIRCLE LAND COMPANY  
BARREL TEN QUARTER CIRCLE, ESCALON CELLARS  
SAN JOAQUIN COUNTY

Barrel Ten Quarter Circle, Escalon Cellars owns and operates a winery at 21801 Highway 120, Escalon, San Joaquin County. A winery has existed at the facility since the 1890's. The facility is presently operated as a non-distilling, non-crushing, non-fermenting wine finishing and storage facility. No bottling or packaging of wine is presently performed at the facility. However, the Discharger has decided to resume grape crushing and fermenting. Historically, the previous operators of the facility crushed grapes, fermented wine, distilled spirits, and bottled products. The Discharger is not proposing to resume distilling or bottling activities.

### Previous Enforcement Activities

Cease and Desist Order (CDO) No. R5-2003-0012 was adopted on 31 January 2003 in response to groundwater quality degradation beneath the Land Application Areas (LAAs). CDO No. R5-2003-0012 was rescinded and replaced by CDO No. R5-2003-0125 on 5 September 2003 after the Discharger purchased the facility. The revised CDO changed the due dates for several of the technical reports that were required of the previous owner. The Discharger was planning to change the winery operations and therefore sought a technical report schedule change.

The Discharger was allowed time to perform studies and design a wastewater system that would halt the continuing groundwater degradation. The Discharger performed the studies and submitted a Report of Waste Discharge (RWD). But the system is not protective of groundwater quality. However, additional studies have been proposed to better determine effluent and LAA loading limits. Revised WDRs were prepared to update the WDRs for the facility and allow the Discharger to perform technical studies to determine protective effluent standards and design/construct improvements at the facility.

### RWD Submittal

The Discharger submitted an RWD dated 28 January 2005 for treatment and land application of wastewater generated at its wine processing and storage facility. The RWD was required by CDO No. R5-2003-0125. The Discharger submitted RWD amendments on 19 September 2005 and 26 May 2006, and additional information was submitted on 25 April 2007 and 30 May 2007. A third RWD amendment was submitted on 10 November 2008. The RWD proposed significant changes in the facility operations, including new wastewater treatment systems, an increase in wine production, and a reduction of LAA acreage.

### Wastewater Generation

Wastewater is, or will be, generated in tank cleaning and sanitation activities, boiler blowdown, ion exchange regeneration brine, clean-in-place system waste products, wine ion exchange treatment, and cooling system condensate. The Discharger has limited wastewater storage capacity. Therefore, all wastewater generated must be discharged soon after generation.

Wastewater flow rates are anticipated to vary from approximately 85,000 to 160,000 gallons per day. Winery wastewater is typically high in total dissolved solids, fixed dissolved solids, biochemical oxygen demand, and nitrogen concentrations. WDRs Order No. 91-223 allowed a monthly average dry weather flow rate of 1.4 million gallons per day (gpd); CDO R5-2003-0125 changed the flow limits and imposed lower flow limits. CDO R5-2003-0125 allowed a monthly average discharge of 140,000 gpd except in the months of August through October when 450,000 gpd is allowed. The tentative WDRs allow a monthly average maximum flow limit of 160,000 gallons per day and an annual total of 48,000,000 gallons of wastewater/ stormwater mixtures. The flow limit is based on the hydraulic capacity of the LAAs but as described below, the loading rate for Fixed Dissolved Solids (FDS) likely exceeds the LAAs uptake capacity.

The flow limit will allow the Discharger flexibility in managing wastewater application because in most months the wastewater generation will be less than the monthly average limit. The total flow limit is designed to control the total loading rate of the land application area with waste constituents. The Order includes Discharge Prohibitions, Specifications, Effluent Limitations, and Land Application Area Requirements that will prevent nuisance conditions and/or overloading the land application areas.

#### Land Application Areas

Wastewater is collected in the Process Water Sump (PW Sump) and applied to LAAs. Historically, 108 acres of LAAs were available at the facility; as part of the facility expansion significant acreage was permanently switched to other uses and is no longer available for wastewater application. Presently, 69.5 acres is available for wastewater application.

A new 8.3 acre tailwater basin was constructed in the land application areas. The basin was constructed prior to revising the Waste Discharge Requirements (WDRs) for the facility; it is not lined and therefore may not be protective of groundwater quality.

The Discharger has proposed a Crop Uptake and Assimilative Capacity (CUAC) study to determine loading rates that will not result in continued groundwater degradation. However, the FDS loading rate greatly exceeds published crop uptake rates. The FDS loading rate is estimated to be 2,769 lbs/ac·year. The Discharger can grow any crop on the LAAs they choose, but no crop takes up the amount of FDS that is presently being applied. Significant reductions in FDS loading rate may be required to protect groundwater quality. The Discharger plans to determine the acceptable loading rate and perform source control as needed to protect groundwater.

Nitrogen compounds are not expected to degrade groundwater quality because the proposed nitrogen loading rate is less than the likely crop uptake rate. The nitrogen loading rate is estimated to be 107 lbs/ac·year; the nitrogen crop uptake rate is estimated to be 225 lbs/ac·year. Uptake of nitrogen should not pose a problem for the Discharger unless the character of the wastewater changes in the future or higher loading rates occur.



Because wastewater will not provide adequate water to meet the crop demand, supplemental water will be applied to the LAA. A connection to the San Joaquin Irrigation District pipeline has been constructed to provide supplemental irrigation water and the tailwater basin will be used to store the water upon delivery through the irrigation canal. The Discharger has not provided analytical data on the supplemental irrigation water quality.

### Stormwater

Most of the facility is exposed to the elements so when precipitation falls, it is collected with any wastewater that is being generated. Stormwater discharges to the same sump (PW Sump) as wastewater through the same collection system. The wastewater/stormwater mixture is pumped to the LAAs. The Discharger has proposed an unlined stormwater basin in a portion of a former land application area that will also be converted to grape truck parking. The Discharger has described operational procedures that are designed to prevent wastewater from being discharged to the basin. The procedures consist of computer control of the discharge location, an electrical conductivity meter to distinguish wastewater from stormwater, and equipment intended to improve the first flush of wastewater constituents from the PW Sump. The equipment and procedures to minimize wastewater discharge to the stormwater basin will be described in the Stormwater Pollution Prevention Plan (SWPPP). The plan must be approved by staff and authorization to proceed must be received from the Executive Officer before using the proposed stormwater basin. Testing of the stormwater system capabilities is expected until the 2009/2010 winter season.

The Monitoring and Reporting Program requires monitoring of the stormwater basin so the effectiveness of the SWPPP will be verified through regular sampling.

### Background Groundwater Quality

The Discharger has investigated on- and off-site groundwater quality by installing groundwater monitoring wells, and cone penetration tests. Groundwater quality at the winery has been degraded for electrical conductivity, total dissolved solids, calcium, magnesium, sodium, sulfate, chloride, hardness, bicarbonate, and alkalinity. The degradation is the result of waste application at the facility.

The investigation revealed that a nearby dairy (G&H Dairy, 16996 Sexton Road) appears to have also impacted groundwater quality, but the winery wastewater has also increased the degradation beyond that which is apparently from the dairy activities. The determination of background groundwater quality at the facility is complicated by the presence and activities of the dairy. The dairy applies dairy wastewater on LAAs that are located to the west, north, and east of the winery facility and LAAs.

The northern area of the winery consists of the 48 acre and 10 acre LAAs, and 8.3 acre Tailwater Basin. The northern area of the site is best characterized by the groundwater quality of Well MW-6, as cited in Finding No. 47. Groundwater quality is considered to likely be

impacted by upgradient waste application areas as well as wastewater percolating from the on-site LAAs.

The southern portion of the winery consists of the remainder of the facility. The groundwater in the southern area has not been as significantly impacted by waste application activities from off-site. The southern portion of the site is best characterized by the groundwater quality of Well MW-1. Groundwater quality in Well MW-1 is listed in Finding No. 47.

The Discharger may use the statistical methods found in Title 27 to develop background values. Background values must be updated annually as described in the MRP. The background groundwater concentrations will be used in preparation of a Facility Upgrade Workplan, a Facility Improvement Report, and possibly to revise the effluent limits at a future Regional Water Board public meeting.

#### Solids Disposal

Pomace and diatomaceous earth (DE) will be drained on a paved area equipped with drains that will collect leachate or stormwater. The WDRs prohibit placing pomace or other solid waste associated with the winery on unpaved ground because of the possibility wastewater leaching from the piles or of stormwater mobilizing wastewater constituents. The Discharger will have to dispose of pomace and diatomaceous earth at off-site areas because there is not adequate LAAs at the facility.

#### Effluent Limitations

An effluent limitation for FDS is included in the WDRs. Consistent with the Salinity Guidance Memo available on the Regional Board's webpage (<http://www.waterboards.ca.gov/centralvalley/cv-salts/progs-polic-rpts/salt-2007-guide-mem.pdf>), interim limits were established. The limits will provide some protection of groundwater quality while the Discharger prepares the Facility Upgrade Workplan. The final effluent limits may be higher or lower than presented in the WDRs depending upon the determinations of the technical reports, Regional Water Board staff, and the Regional Water Board. The approach allows the Discharger to continue operating while improvements are designed and constructed.

Wastewater loading limits for the LAAs are included for Biochemical Oxygen Demand (BOD). The BOD limit is intended to minimize the possibility of odors being generated by the land application. The BOD limits are 500 lbs/ac•day as a cycle loading rate.

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

Surface water from the facility is to the South San Joaquin Irrigation Canal, tributary to Lone Tree Creek and the San Joaquin River in the Sacramento San Joaquin Delta. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley*

*Region, Fourth Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. Beneficial uses often determine the water quality objectives that apply to a water body. For example, waters designated as municipal and domestic supply must meet the maximum contaminant levels (MCLs) for drinking waters. The Basin Plan sets forth the applicable beneficial uses (industrial, agricultural, and domestic and municipal supply in this instance) of groundwater, procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity.

### Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan.

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Regional Board to evaluate and fully characterize:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;
- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degree of degradation below water quality objectives.

In allowing a discharge, the Regional Board must comply with CWC Section 13263 in setting appropriate conditions. The Regional Board is required, relative to the groundwater that may be affected by the discharge, to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Regional Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (CWC 13263(b)) and must consider other waste discharges and factors that affect that capacity. An antidegradation evaluation is required as part of the Facility Upgrade Workplan.

Groundwater monitoring has been conducted at the site and groundwater quality has been degraded. The proposed Order establishes effluent limitations to control degradation while wastewater treatment and needed source control is implemented.

### Treatment Technology and Control

Given the character of food processing wastewater, slow rate land treatment or secondary treatment technology is generally sufficient to control degradation of groundwater from decomposable organic constituents. But slow rate treatment may not control all waste constituents such as FDS.

Food processing wastewater typically contains nitrogen in concentrations greater than water quality objectives, which vary according to the form of nitrogen. Groundwater degradation by nitrogen can be controlled by an appropriate screening, settling, and slow rate land application with cropping activities when crops are harvested and removed from the land application area. The effectiveness varies, but generally best practicable treatment and control is able to control nitrogen degradation of groundwater at a concentration well below the water quality objectives.

Dissolved solids can pass through the treatment process and soil profile; effective control of such constituents relies primarily upon source control and pretreatment measures. If not managed carefully, long-term land discharge of food processing wastewater is likely to degrade groundwater with dissolved solids (as measured by TDS and EC). Source control is an effective means to prevent groundwater degradation with FDS.

A discharge of wastewater that overloads soils with nutrients and organics can result in anaerobic conditions in the soil profile, which in turn creates organic acids and decreases soil pH. Under conditions of low soil pH (below 5), iron and manganese compounds in the soil can solubilize and leach into groundwater. Overloading the land application areas is preventable. However, soil is expected to provide adequate buffering of acidic or basic wastewater.

### Title 27

Title 27, CCR, Section 20005 et seq. ("Title 27"), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable under Title 27 regulations.

The discharge of wastewater and the operation of storage facilities associated with a wastewater application can be allowed without requiring compliance with Title 27 only if groundwater degradation complies with the Basin Plan, Resolution No. 68-16 (Antidegradation Policy), and does not violate any water quality objectives.

### Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order includes influent, tailwater basin, stormwater basin, land application area, solids, and groundwater monitoring. In order to adequately characterize wastewater, the Discharger is required to monitor for BOD, pH nitrogen compounds, dissolved solids (TDS and FDS), sodium, chloride, and standard minerals. To ensure that the tailwater basin and stormwater basin do not create nuisance conditions, the Discharger is required to monitor freeboard and dissolved oxygen weekly.

The Title 27 zero leakage protection strategy relies heavily on extensive groundwater monitoring to increase a discharger's awareness of, and accountability for, compliance with the prescriptive and performance standards. With wastewater applied to land, monitoring takes on even greater importance. The proposed Order includes monitoring of wastewater quality, application rates, and groundwater quality.

Title 27 regulations pertaining to groundwater monitoring and the detection and characterization of waste constituents in groundwater have been in effect and successfully implemented for many years. No regulation currently specifies similar criteria more suitable for a situation where extensive land application of food processing wastewater occurs. It is appropriate that the Title 27 groundwater monitoring procedures be extended and applied on a case-by-case basis under Water Code Section 13267.

The Discharger must monitor groundwater for wastewater constituents expected to be present in the discharge, capable of reaching groundwater, and violating groundwater limitations if treatment, control, and environmental attenuation prove to be inadequate. Background groundwater quality is characterized but the statistical determination of background quality has not been formalized. The Order requires that determination.

### Reopener

The conditions of discharge in the proposed Orders were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. Additional information must be developed and documented by the Discharger as required by schedules set forth in the proposed Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible and that could involve substantial cost. It may be appropriate to reopen the Orders if applicable laws and regulations

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change, but the mere possibility that such laws and regulations may change is not sufficient basis for reopening the Orders. The CWC requires that waste discharge requirements implement all applicable requirements.

TRO: 3/20/09