

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT G
MONITORING AND REPORTING PROGRAM

This model monitoring and reporting program (MRP) contains the monitoring requirements for facilities covered by the General Waste Discharge Requirements for Winery Process Water, Order WQ 2021-0002-DWQ (General Order). This MRP is required pursuant to Water Code section 13267. The Discharger shall not implement any changes to the MRP unless and until a revised MRP is issued or adopted by the regional water quality control board (regional water board). Dischargers enrolled under this General Order and administratively supervised by a Local Agency Oversight Program shall comply with this MRP. A local agency may require additional monitoring and reporting, but the local agency program does not replace the requirements contained herein.

The Discharger owns and/or operates the winery that is subject to the Notice of Applicability (NOA) and this General Order. The reports are necessary to ensure that the Discharger complies with the NOA and General Order. Pursuant to Water Code section 13267, the Discharger shall implement this MRP and shall submit the monitoring reports described herein. Pursuant to Water Code section 13268, failure to submit technical or monitoring program reports, including but not limited to, Compliance Letters as described herein or falsifying information is guilty of a misdemeanor and may be subject to enforcement action.

The State Water Board and regional water boards have transitioned primarily to a paperless office system and may provide procedures for electronic submittal or modifications to the MRP and its associated supporting information or documents. Additional information regarding submittal of electronic reports is provided under the Reporting section of this MRP.

The Discharger may submit a request for a reduced monitoring frequency from the regional water board once adequate data have been collected to characterize the site and if monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter (e.g., typically at least **2 years** of quarterly sampling is required for adequate characterization). The proposal shall include adequate technical justification for the requested reduction in monitoring frequency and be approved in writing by the regional water board Executive Officer.

Dischargers in all tiers shall comply with all monitoring and reporting requirements described in this MRP unless otherwise noted. Acronyms used within this MRP are defined in the Acronyms and Abbreviations section of this General Order and a glossary of terms is included in Attachment A of this General Order.

QUALITY ASSURANCE AND CONTROL

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The Discharger shall use clean sample containers and sample handling, storage, and preservation methods in accordance with approved U.S. EPA analytical methods or as recommended by the selected analytical laboratory. All analytical samples shall be labeled and records maintained to show the name of the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample. All samples collected for laboratory analyses shall be preserved as required and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed.

All samples submitted to a laboratory for analysis shall be identified in a properly completed and signed chain of custody form containing the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample. The chain of custody form shall also contain custody information, including the date, time, transport method, and to whom samples were relinquished.

Consistent with Water Code section 13176, data produced and reports submitted for compliance with this General Order must be generated by a laboratory with accreditation from the State Water Board, Division of Drinking Water, Environmental Laboratory Accreditation Program (ELAP), where accreditation is specific to the analyses required, or the laboratory must hold a valid certificate of accreditation for equivalent analytical test methods validated for the intended uses and approved by the State Water Board or regional water board. The laboratory must include quality assurance/quality control data in all data reports and submit electronic data as required by the State Water Board and regional water boards. Data generated using field tests are exempt pursuant to California Water Code Section 13176. Field instruments may be used to test field parameters (such as for pH, electrical conductivity, and dissolved oxygen) provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions. Field calibration reports shall be maintained for at least **3 years**.

All sample and analysis field logs, laboratory reports, and quality assurance/quality control data shall be reported with the sample results to which it applies. The reports shall include applicable information such as the method, equipment, analytical detection, quantitation limits, recovery rates, an explanation for any recovery rate that is outside method specifications, results of method blanks, results of matrix spikes and surrogate samples, and the frequency of quality control analysis. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in the quality assurance/quality control samples (e.g., laboratory blanks), the accompanying sample results shall be appropriately flagged.

SOURCE WATER MONITORING

The Discharger shall monitor each source of water supply used for winery processing activities (water supply well, surface water, municipal source, etc.) and for supplemental irrigation (e.g., agricultural well, irrigation canal, etc.). For each source of water supply used for winery processing activities, the Discharger shall also calculate the flow-weighted annual average FDS concentration using monthly flow data and the most recent chemical analysis conducted.

Parameter	Units	Sample Type	Frequency ⁽²⁾		
			Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽¹⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
TDS	mg/L	Grab	Annually	Annually	Semi-annually
FDS	mg/L	Grab	Annually	Annually	Semi-annually
Flow-weighted FDS	mg/L	Computed average	Annually	Annually	Annually
Total Kjeldahl nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Ammonia as nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Nitrate + nitrite as nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Total nitrogen ⁽³⁾	mg/L	Calculated	Annually	Annually	Annually
General minerals ⁽⁴⁾	mg/L	Grab	--	--	Annually

(1) Source water flowrate may be measured directly via a flowmeter or determined from customer billing information. Supplemental irrigation water flow from a canal or similar source may be determined using an accurate alternative method.

(2) Source water monitoring for water supply sources used for winery processing activities shall be collected when the facility is in operation and discharging process water. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(3) Monitoring for supplemental irrigation water sources only.

(4) The minimum constituents are listed in Attachment A.

WINERY EFFLUENT MONITORING

Winery effluent measurements and samples are required when process water is generated. The Discharger shall collect winery effluent flow measurements and samples after screening and at a point in the system where process water, including any process water generated from outdoor processing areas, discharges from the winery but before treatment in a pond, land application area, or subsurface disposal system. The Discharger shall calculate the flow-weighted annual average FDS concentration using monthly flow data and the most recent chemical analysis conducted.

Parameter	Units	Sample Type	Frequency ⁽²⁾			
			Tier 1	Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽¹⁾	Continuous, daily, or average daily flow	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Days of operation (generating process water) ⁽³⁾	day	Observation	Daily	Daily	Daily	Daily
TDS	mg/L	Grab	--	Quarterly	Monthly	Monthly
FDS	mg/L	Grab	--	Quarterly	Monthly	Monthly
Flow-weighted FDS	mg/L	Computed average	--	Quarterly	Monthly	Monthly

(1) Winery effluent flowrate shall be measured directly via a flowmeter or, for Tier 1 and Tier 2 facilities only, may be calculated using an accurate alternative method (e.g., assume effluent flow is equal to facility source water use, calculate effluent flow from a daily water balance of all effluent storage tank levels). The regional water board may specify a required flow measurement method.

(2) Winery effluent monitoring shall be conducted when process water is generated. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(3) Winery effluent observations for operating days only required when process water is being generated.

POND MONITORING

In addition to pond samples, the Discharger shall inspect the pond and note the pond berm and liner conditions in field logs, a summary of which shall be included in the monitoring reports. Process water ponds shall be monitored until dry as follows:

Parameter	Units	Sample Type	Frequency		
			Tier 2	Tier 3	Tier 4
Freeboard	0.1 foot ⁽¹⁾	Observation	Weekly	Weekly	Weekly
Berm condition ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Liner condition ⁽³⁾	NA	Observation	When visible	When visible	When visible
DO ⁽⁴⁾	mg/L	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly
pH	pH units	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly
EC	µmho/cm	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly

(1) Freeboard shall be monitored to the nearest tenth of a foot.

(2) Inspect the pond berm for evidence of burrowing animals, erosion, cracks, and other conditions that may impact berm integrity.

(3) Inspect the pond liner for evidence of damage (e.g., cracks, tears, punctures) and other conditions that may impact liner integrity.

(4) Collect dissolved oxygen (DO) samples at a depth of one foot below the surface opposite the pond inlet between the hours of 0600 and 0900.

EFFLUENT TO LAND APPLICATION AREA MONITORING

Effluent to land application area monitoring shall be conducted when there is discharge to land. The Discharger shall collect effluent samples following screening and before it is discharged to the land application area, or, if treatment is provided (e.g., in a pond), at a point in the system following treatment and before process water is discharged to the land application area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Flow	Gpd	Metered or calculated ⁽²⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
pH ⁽³⁾	pH units	Field	Bi-weekly	Bi-weekly	Weekly
EC ⁽³⁾	µmho/cm	Field	Bi-weekly	Bi-weekly	Weekly
BOD	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: bi-weekly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁷⁾	Crush: weekly Off-season: bi-weekly or monthly ⁽⁸⁾
FDS	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: monthly Off-season: one-time ⁽⁶⁾	Monthly	Monthly
TDS	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: monthly Off-season: one-time ⁽⁶⁾	Monthly	Monthly
Total Kjeldahl nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Ammonia as nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Nitrate + nitrite as nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Total nitrogen	mg/L	Calculated	Monthly	Monthly	Monthly
General minerals ⁽⁹⁾	mg/L	Grab or 24-hr composite ⁽⁴⁾	--	--	Annually

- (1) Effluent to land application area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Effluent flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (3) The pH and EC monitoring may be satisfied using pond monitoring results if the discharge to the land application area is entirely from the pond.
- (4) **Tiers 2 and 3:** Collect grab samples.
Tier 4: Collect 24-hour composite samples. Grab samples can be collected in lieu of 24-hour composite samples if collected near the outlet of a pond with at least 24-hour residence time and the discharge to the land application area is entirely from the pond.
- (5) Collect samples bi-weekly during the crush period. Collect one representative sample during the off-season.
- (6) Collect samples monthly during the crush period. Collect one representative sample during the off-season.
- (7) Collect samples bi-weekly during the crush period. Collect samples monthly during the off-season.
- (8) Collect samples weekly during the crush period; collect samples bi-weekly during the off-season. The off-season samples may be collected monthly instead of bi-weekly if the samples are collected near the outlet of a pond with at least 72-hour residence time and the discharge to the land application area is entirely from the pond.
- (9) The minimum constituents are listed in Attachment A.

LAND APPLICATION AREA MONITORING

Land application area monitoring shall be conducted when there is discharge to land. The Discharger shall perform the following routine monitoring and loading calculations for the land application area. In addition, the Discharger shall inspect the land application area and note the field conditions in field logs, a summary of which shall be included in the monitoring reports. Data shall be collected and presented in tabular format for each individual management unit and shall include the following:

ATTACHMENT G – MONITORING AND REPORTING
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

G-8

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Field conditions ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Cropping activities ^(3,4)	NA	Observation	When it occurs	When it occurs	When it occurs
Application field number ⁽⁴⁾	NA	Observation	Daily	Daily	Daily
Application area ⁽⁴⁾	acres	Measurement	Daily	Daily	Daily
Days in irrigation cycle ^(4,5)	day	Observation	Daily	Daily	Daily
Process water flow ⁽⁴⁾	gpd	Metered or calculated ⁽⁶⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Process water loading ⁽⁴⁾	in/ac/d ⁽⁷⁾	Calculated	--	Daily	Daily
Supplemental water flow ⁽⁴⁾	gpd	Metered or estimated	Daily or average daily flow	Daily	Daily
Supplemental water loading ⁽⁴⁾	in/ac/d ⁽⁷⁾	Calculated	--	Daily	Daily
Precipitation	0.01 inch	Rain gauge ⁽⁸⁾	Daily	Daily	Daily
Total hydraulic loading ^(4,9)	in/ac/mo ⁽⁷⁾	Calculated	--	Daily	Daily
BOD loading ⁽¹⁰⁾					
Day of application	lb/ac	Calculated or estimated	Daily	Daily	Daily
Cycle average	lb/ac/d	Calculated	Daily	Daily	Daily
Nitrogen loading ⁽¹¹⁾					
Nitrogen loading by source ⁽¹²⁾	lb/ac/mo	Calculated	Monthly	Monthly	Monthly
Cumulative nitrogen loading ⁽¹³⁾	lb/ac/yr	Calculated	Annually	Annually	Annually
Salt loading ⁽¹⁴⁾					
From process water	lb/ac/mo	Calculated	--	Monthly	Monthly
Cumulative salt loading	lb/ac/yr	Calculated	--	Annually	Annually

- (1) Land application area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Inspect the land application area for evidence of erosion, field saturation, runoff, or presence of nuisance conditions (e.g., flies, ponding, etc.).
- (3) Record the cropping activities (e.g., fertilizer applied [total pounds and pounds per acre], fertilizer nitrogen content, type of crop planted or landscape irrigated, planting and harvest dates, crop harvest yield [total wet tons and wet tons per acre], and crop tissue sampling dates/analytical results (if applicable) by land application area field or individual management unit number, as appropriate.
- (4) For land application fields divided into smaller management units (e.g., subfields, subareas, checks), identify the individual management unit number, its acreage, the amounts of process water and of supplemental water applied, and the cropping or planting activities at each individual management unit.
- (5) Identify the number of wet days (i.e., days with process water irrigation) and dry days (i.e., non-irrigation days following wet days) in each irrigation cycle by individual management unit.
- (6) Process water flowrate shall be measured directly using a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (7) Report to the nearest 0.1 inches per acre per day (in/ac/d) or 0.1 inches per acre per month (in/ac/mo).
- (8) National Weather Service or California Irrigation Management Information System (CIMIS) data from the nearest weather station are acceptable.
- (9) Combined loading from process water, supplemental irrigation water, and precipitation.
- (10) The daily calculation or estimate is necessary to calculate the cycle average BOD loading rates for each individual management unit which shall be calculated using the applied volume of process water, applied acreage, and the moving average of the three most recent BOD process water results.
- (11) Nitrogen loading for each individual management unit shall be calculated using the applied volume of process water, applied acreage, and the average process water concentration for total nitrogen for that month.
- (12) Loading from each source of nitrogen applied to each individual management unit shall be shown as applicable, e.g., from process water, supplemental water, fertilizers, process solids, soil amendments, etc.
- (13) Cumulative nitrogen loading shall be shown for each individual management unit.
- (14) Salt loading for each individual management unit shall be calculated using the applied volume of process water, applied acreage, and the average process water concentration for FDS for that month.

SUBSURFACE DISPOSAL SYSTEM MONITORING

The Discharger shall conduct settling tank monitoring for the following:

Parameter	Units	Sample Type ⁽¹⁾	Frequency		
			Tier 2	Tier 3	Tier 4
Thickness of accumulated sludge and floating scum layer in each tank compartment	Inches	Staff gauge	Annually	Annually	Annually
Vertical distance between bottom of floating scum layer and top of tank outlet	Inches	Staff gauge	Annually	Annually	Annually
Vertical distance between top of accumulated sludge layer and bottom of tank outlet	Inches	Staff gauge	Annually	Annually	Annually

(1) Or an equivalent measuring method.

EFFLUENT TO SUBSURFACE DISPOSAL AREA MONITORING

Effluent to subsurface disposal area monitoring shall be conducted when there is discharge to land. The Discharger shall collect effluent samples at a point in the system following subsurface disposal system treatment and before process water is discharged to the subsurface disposal area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

ATTACHMENT G – MONITORING AND REPORTING
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

G-11

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽²⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
pH	pH units	Field	Bi-weekly	Bi-weekly	Weekly
EC	µmho/cm	Field	Bi-weekly	Bi-weekly	Weekly
BOD	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: one-time ⁽⁴⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
TSS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: one-time ⁽⁴⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
FDS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: monthly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
TDS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: monthly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Total Kjeldahl nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Ammonia as nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Nitrate + nitrite as nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Total nitrogen	mg/L	Calculated	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
General minerals ⁽⁸⁾	mg/L	Grab or 24-hr composite ⁽³⁾	--	--	Annually

- (1) Effluent to subsurface disposal area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Effluent flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (3) **Tiers 2 and 3:** Collect grab samples.
Tier 4: Collect 24-hour composite samples. Grab samples can be collected in lieu of 24-hour composite samples if collected near the outlet of a subsurface disposal system tank (e.g., storage or settling tank) with at least 24-hour residence time and the discharge to the subsurface disposal area is entirely from the tank.
- (4) Collect samples bi-weekly during the crush period. Collect one representative sample during the off-season.
- (5) Collect samples monthly during the crush period. Collect one representative sample during the off-season.
- (6) Collect samples bi-weekly during the crush period. Collect samples monthly during the off-season.
- (7) Collect samples bi-weekly during the crush period. Collect samples bi-weekly during the off-season. The off-season samples may be collected monthly instead of bi-weekly if the samples are collected near the outlet of a subsurface disposal system tank (e.g., storage or settling tank) with at least 72-hour residence time and the discharge to the subsurface disposal area is entirely from the tank.
- (8) The minimum constituents are listed in Attachment A.

SUBSURFACE DISPOSAL AREA MONITORING

Subsurface disposal area monitoring shall be conducted when there is discharge to land. The Discharger shall perform the following routine monitoring and loading calculations for the subsurface disposal area. In addition, the Discharger shall inspect the subsurface disposal area and note the field conditions in field logs, a summary of which shall be included in the monitoring reports. Data shall be collected and presented in tabular format for each individual management unit and shall include the following:

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Disposal area conditions ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Cropping activities ^(3,4)	NA	Observation	When it occurs	When it occurs	When it occurs
Disposal area field number ⁽⁴⁾	NA	Observation	Daily	Daily	Daily
Disposal area acreage ⁽⁴⁾	Acres	Measurement	Daily	Daily	Daily
Days in discharge cycle ^(4,5)	Day	Observation	Daily	Daily	Daily
Process water flow ⁽⁴⁾	gpd	Metered or calculated ⁽⁶⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Hydraulic loading ⁽⁴⁾	gal/sqft/d ⁽⁷⁾	Calculated	Daily	Daily	Daily
Hydraulic loading ⁽⁴⁾	gal/sqft/mo ⁽⁷⁾	Calculated	Monthly	Monthly	Monthly
Precipitation	0.01 inch	Rain gauge ⁽⁸⁾	Daily	Daily	Daily

(1) Subsurface disposal area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(2) Inspect the dosing system (e.g., pump controllers, valves, distribution piping) and identify maintenance and repair needs. Inspect the subsurface disposal area for evidence of erosion, deep-rooted plants, burrowing animals, field saturation, water surfacing, runoff, or presence of nuisance conditions (e.g., odors, flies, ponding, etc.).

(3) Record the cropping activities (e.g., fertilizer applied [total pounds and pounds per acre], fertilizer nitrogen content, type of crop planted or landscape irrigated, and planting and harvest dates) by subsurface disposal area field or individual management unit number, as appropriate.

- (4) For subsurface disposal area fields divided into smaller management units (e.g., subfields, subareas), identify the individual management unit number, its acreage, and the amount of process water discharged to each individual management unit.
- (5) Identify the number of wet days (i.e., days with process water discharge) and dry days (i.e., non-discharge days following wet days) in each discharge cycle by individual management unit.
- (6) Process water flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (7) Measure hydraulic loading for the individual management units in gallons per square foot of discharge trench per day (gal/sqft/d) and gallons per square foot of discharge trench per month (gal/sqft/mo). Report to the nearest 0.1 gal/sqft/d or 0.1 gal/sqft/mo.
- (8) National Weather Service or CIMIS data from the nearest weather station are acceptable.

SOLIDS MONITORING

Process solids monitoring shall be conducted when process solids are generated. Monitoring shall also include solids characterization and field monitoring when process solids are land applied. Process solids monitoring shall include the following:

Parameter	Units	Sample Type	Frequency		
			Tier 2	Tier 3	Tier 4
Solids source ⁽¹⁾	NA	Observation	Monthly	Monthly	Monthly
Solids generated ⁽¹⁾	wet tons	Estimated or measured	Monthly	Monthly	Monthly
Disposal method ⁽¹⁾	NA	Observation	Monthly	Monthly	Monthly
Land applied solids ⁽²⁾					
Amount applied by source ⁽³⁾	wet tons	Estimated or measured	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Application field number ⁽³⁾	NA	Observation	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Application area ⁽³⁾	acres	Observation	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Total Kjeldahl nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Ammonia as nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Nitrate + nitrite as nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Total nitrogen	mg/kg ⁽⁵⁾	Calculated	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾

- (1) Identify the source of the process solids (e.g., pomace, lees, pond dredging), the amount generated, and the solids disposal or reuse method (e.g., hauled offsite, land applied onsite).
- (2) Monitor and sample solids only when process solids are applied to the LAA.
- (3) For land application fields divided into smaller management units (e.g., subfields, subareas, checks), identify the individual management unit number, its acreage, and the estimated amount of process solids from each source applied to each individual management unit.
- (4) **Tier 2:** Record the amount of solids by source applied to each individual management unit during the year.
Tiers 3 and 4: Record the amount of solids by source applied to each individual management unit during the month.
- (5) Dry weight basis. Moisture content to be determined and reported by the laboratory.
- (6) Collect one representative sample during the crush period from each solids source (e.g., pomace stockpile). If process solids are land applied from a solids cleanout activity (e.g., a pond is dredged, settling tank is pumped out), collect one representative sample of the solids to be land applied.

GROUNDWATER MONITORING

Tier 4: Facilities required to conduct groundwater monitoring shall conduct field monitoring and groundwater characterization. After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged until pH, temperature, and EC have stabilized. Water that has been standing within the well screen, casing, and filter pack may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume of water removed during purging is typically a minimum of 3 volumes of water within the well casing and screen, or additionally the filter pack pore volume. Alternatively, low flow purging and sampling techniques may be utilized. Samples shall be collected and analyzed for the following:

Parameter	Units	Sample Type	Frequency (Tier 4 only)
Depth to groundwater	0.1 foot ⁽¹⁾	Measured	Quarterly
Groundwater elevation	0.1 foot ⁽²⁾	Calculated	Quarterly
Groundwater gradient	feet/feet	Calculated	Quarterly
Groundwater flow direction	Degrees	Calculated	Quarterly
pH	pH units	Field	Quarterly
EC	µmho/cm	Field	Quarterly
FDS	mg/L	Grab	Quarterly
TDS	mg/L	Grab	Quarterly
Total Kjeldahl nitrogen	mg/L	Grab	Quarterly
Ammonia as nitrogen	mg/L	Grab	Quarterly
Nitrate + nitrite as nitrogen	mg/L	Grab	Quarterly
Total nitrogen	mg/L	Calculated	Quarterly
Iron, dissolved	mg/L	Grab	Annually
Manganese, dissolved	mg/L	Grab	Annually
General minerals ⁽³⁾	mg/L	Grab	Annually

(1) Measure to the nearest tenth of a foot.

(2) Calculate to the nearest tenth of a foot above mean sea level.

(3) The minimum constituents are listed in Attachment A.

REPORTING

Dischargers in all tiers shall submit Compliance Letters and Annual Reports. Tier 4 Dischargers shall also submit Semi-annual Reports twice a year.

A Compliance Letter shall be submitted any month in which a violation occurs. Additionally, the Compliance Letter shall serve as the transmittal letter accompanying each monitoring report. Standalone Compliance Letters are due by the **first day of the second month** after the monitoring period. For example, a Compliance Letter for January is due on March 1.

Semi-annual Reports are due by the **first day of the second month** after the reporting period. For example, the first Semi-annual Report is due on August 1. The second semi-annual monitoring results may be incorporated into the Annual Report instead of submitted as a standalone report. All groundwater monitoring reports shall be prepared by or under the supervision of a qualified California Registered Civil Engineer or Geologist.

All monitoring results for the reporting year shall be reported in the Annual Report, which is due by **April 1** after the reporting year. For example, the Annual Report for reporting year 2021 is due on April 1, 2022. An abbreviated Annual Report format is provided for Tier 1 Dischargers in the Annual Reports (Tier 1 Only) section of this Reporting category.

The reporting periods and reporting schedules are summarized in Table G-1.

Table G-1. Reporting Schedule (All Tiers)

Report	Reporting Period	Due Date	Tier 1	Tier 2	Tier 3	Tier 4
Compliance Letter ⁽¹⁾	Jan – Dec	First day of second month after reporting period	X	X	X	X
<u>Semi-annual Report</u>						X
First semi-annual	Jan – Jun	Aug 1				
Second semi-annual	Jul – Dec	Mar 1 ⁽²⁾				
Annual Report	Jan – Dec	Mar 1	X ⁽³⁾	X	X	X

(1) Submit for any month in which a violation or exceedance occurs. Also submit as the transmittal letter for each monitoring report.

(2) The second semi-annual monitoring results may be incorporated into the Annual Report instead of submitted as standalone Semi-annual Report.

(3) An abbreviated Annual Report format is provided for Tier 1 Dischargers.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample location, constituents, concentrations, and observations are readily discernible. The data shall be summarized in such a manner that illustrates clearly whether the Discharger complies with this General Order and facility NOA. The Discharger shall include copies of analytical laboratory reports. Results of any monitoring done more frequently than specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

All monitoring reports and compliance letters shall comply with the signatory requirements in the Reporting Provisions section of this General Order.

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

The State Water Board and regional water boards have transitioned primarily to a paperless office system. Unless otherwise directed, the Discharger shall submit all narrative reports in portable document format (pdf) and all data in a spreadsheet (e.g., csv, txt, xls) or Microsoft Word (e.g., doc) format via regional water board email as listed in Table G-5. The NOA will include instructions and the information to be included in the transmittal email accompanying the report.

In some regions, the Discharger will be directed to submit all reports and analytical data to the State Water Board GeoTracker database. [GeoTracker database information](http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml) is provided on the Internet <http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml>.

Table G-2. Regional Water Board Email Addresses for Electronic Report Submittal

Regional Water Board	Email Address
North Coast Regional Water Board	northcoast@waterboards.ca.gov
San Francisco Bay Regional Water Board	wdr.monitoring@waterboards.ca.gov
Central Coast Regional Water Board	centralcoast@waterboards.ca.gov
Los Angeles Regional Water Board	losangeles@waterboards.ca.gov
Central Valley Regional Water Board – Redding	centralvalleyredding@waterboards.ca.gov
Central Valley Regional Water Board – Rancho Cordova	centralvalleysacramento@waterboards.ca.gov
Central Valley Regional Water Board – Fresno	centralvalleyfresno@waterboards.ca.gov
Lahontan Regional Water Board – South Lake Tahoe	lahontan@waterboards.ca.gov
Lahontan Regional Water Board – Victorville	lahontan@waterboards.ca.gov
Colorado River Regional Water Board	rb7-wdrs_paperless@waterboards.ca.gov
Santa Ana Regional Water Board	santaana@waterboards.ca.gov
San Diego Regional Water Board	rb9paperless@waterboards.ca.gov

A. Compliance Letters (All Tiers) shall include the following:

1. Discharger name, facility name, facility tier, MRP number, Waste Discharge Identification Number, and contact information (telephone number and email).
2. A discussion of any violations or exceedances that occurred during the reporting period, all actions taken or planned for correcting the violations and preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions. If the Discharger previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.
3. This penalty of perjury statement shall be included and signed by the Discharger or the Discharger's duly authorized representative in compliance with the Reporting Provisions section of this General Order.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

B. Semi-annual Reports (Tier 4 Only) shall include the following:

Provide the information as described in the following sections of the Annual Report (Tiers 2, 3, and 4):

1. Facility Information – Items 1, 2, and 3
2. Process Water Reporting – Items 6, 7, and 8
3. Pond Reporting – Items 9 and 10
4. Land Application Area Reporting – Items 12 through 16
5. Subsurface Disposal Area Reporting – Items 19 through 23
6. Solids Reporting – Items 24 through 29
7. Compliance Summary – Items 35, 38, and 39

Dischargers required to conduct groundwater monitoring shall also provide the information as described in the following sections of the Annual Report (Tiers 2, 3, and 4):

8. Groundwater Reporting – Items 30 through 34
9. Compliance Summary – Items 37

C. Annual Reports (Tier 1 Only) shall include the following:

1. A scaled map that shows facility structures (e.g., buildings, crush pads), processing areas, process solids storage areas, ponds, land application areas, subsurface disposal areas, water supply wells, and groundwater monitoring wells, and any other relevant site features. Include identifying information, e.g., labels, well identification number, field and individual management unit numbers and acreages, etc.
2. Results of the monitoring specified in the Winery Effluent Monitoring section of the MRP. Provide the total annual process flow and total days of operation for the reporting period and compare the total annual flow to the facility design flow.
3. A discussion of any violations that occurred during the reporting year, all actions taken or planned for correcting or preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions.
4. A summary of any changes in processing that occurred during the reporting year or planned for the next year that might affect process water flow rates.
5. Descriptions of any facility or best practicable treatment or control (BPTC) improvements or modifications required by the facility NOA that were begun and/or completed during the reporting year or planned for the next reporting year. Include an implementation schedule.

6. Self-certification that the facility complied with the criteria to qualify as a Tier 1 facility (except as noted in Item 3) during the current reporting year and will comply with the criteria in the next reporting year.

D. Annual Reports (Tiers 2, 3, and 4) shall include the following:

Facility Information

1. Names and telephone numbers of persons to contact regarding the discharge for emergency and/or routine situations.
2. A scaled map that shows facility structures (e.g., buildings, crush pads), processing areas, process solids storage areas, ponds, land application areas, subsurface disposal areas, water supply wells, and groundwater monitoring wells, and any other relevant site features. Include identifying information, e.g., labels, well identification number, field and individual management unit numbers and acreages, etc.
3. A summary of any changes in processing that might affect waste characterization and/or discharge flowrates.
4. Copies of laboratory analytical reports and chain-of-custody forms if requested by the regional water board.

Source Water Reporting

5. Results of the monitoring specified in the Source Water Monitoring section of the MRP. Results shall include supporting calculations.

Process Water Reporting

6. Results of the monitoring specified in the Winery Effluent Monitoring section of the MRP by month for the reporting period. Results shall include supporting calculations.
7. A comparison of the flow-weighted annual average FDS results from source water supplies and winery effluent monitoring to the FDS threshold by month for the reporting period.
8. Total monthly and annual days of operation and discharge volumes for the reporting period expressed in gallons. For each month, also calculate the maximum daily flow and the monthly average flow.

Pond Reporting

9. Results of the monitoring specified in the Pond Monitoring section of the MRP.
10. A summary of pond monitoring log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.
11. If a performance evaluation was conducted during the reporting year, a description of the pond liner integrity and leak detection tests and results, and a discussion of the pond liner performance.

Land Application Area Reporting

12. Results of the monitoring and loading calculations specified in the Effluent to Land Application Area Monitoring and Land Application Area Monitoring sections of the MRP.
13. Monthly and annual process water and supplemental water volumes applied to each individual management unit expressed in gallons.
14. Calculation of the monthly and total hydraulic loading from process water and supplemental water applied to each individual management unit by month.
15. Calculation of the cycle average BOD loading rates for each individual management unit. Include the number of days in each irrigation cycle.
16. A summary of land application area monitoring log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.
17. An annual nitrogen balance showing the total annual nitrogen loading (in pounds per acre per year [lb/ac/yr]) to each land application field or individual management unit, as appropriate, as calculated from the sum of the monthly loading from all sources of nitrogen applied to the land. The nitrogen balance shall include:
 - a. Types of crops grown or landscape irrigated, planting and harvest dates, and crop harvest yield.
 - b. Nitrogen loading by source (e.g., fertilizer, process water, process solids, compost, etc.). Indicate any estimated nitrogen losses that reduced plant available nitrogen used in the nitrogen balance calculations.
 - c. Crop uptake rates for each crop grown or landscape irrigated. Provide results of representative plant tissue analysis or technical reference source of the crop uptake rate values.
 - d. A comparison of the total nitrogen applied to the nitrogen taken up by the crop harvested or removed.
18. Total annual FDS loading (in lb/ac/yr) to each land application area field or individual management unit, as appropriate, as calculated from the sum of the monthly loading.

Subsurface Disposal Area Reporting

19. Results of the monitoring and loading calculations specified in the Subsurface Disposal System Monitoring, Effluent to Subsurface Disposal Area Monitoring, and Subsurface Disposal Area Monitoring sections of the MRP.
20. Monthly and annual volumes of process water discharged to each individual management unit expressed in gallons.
21. Calculation of the daily and monthly hydraulic load applied to each individual management unit.
22. A summary of subsurface disposal area monitoring log notations. The entire contents of the log do not need to be submitted unless requested by the regional water board.
23. Types of crops grown or landscape irrigated, planting and harvesting dates, amount of fertilizer applied, and nitrogen content of fertilizer.

Solids Reporting

24. Results of the monitoring specified in the Solids Monitoring section of the MRP.
25. Total amount of process solids generated during the reporting period in tons.
26. A description of the process solids disposal or reuse method. If more than one method is used, include the percentage disposed or reused by each method. Include the name and location of the disposal site; describe the reuse or disposal of the material (e.g., land application, composting onsite, offsite reuse, offsite compost facility, landfill disposal).
27. Descriptions of any process solids generated from pond dredging, settling tank pump out, or other such solids cleanout activities conducted during the reporting period. Include a description of the activity, the amount of material removed, date, type of service, service provider, and destination of solids removed for offsite reuse or disposal.
28. If process solids are land applied, monthly and total amount of process solids applied to each land application area field or individual management unit and the applied acreage.
29. Results of process solids characterization by solids source.

Groundwater Reporting (Tier 4 Only)

30. Results of the monitoring specified in the Groundwater Monitoring section of the MRP by monitoring period. If there is insufficient water for sampling the monitoring well, the well shall be reported as dry for that quarterly monitoring period.
31. A table and graphs showing current and historical groundwater depth, elevation, and constituent concentrations through the current monitoring period for each monitoring well.

32. Groundwater contour maps by quarter for the reporting period that show the gradient and direction of groundwater flow at the facility, pond, LAA, and/or subsurface disposal area. The map shall also include the locations of the water supply wells, groundwater monitoring wells, processing areas, waste discharge areas, and any other relevant site features.
33. A discussion of the groundwater elevation and constituent concentration trends over time and any impacts the discharge is having or projected to have on groundwater quality.
34. A summary of the groundwater monitoring field log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.

Compliance Summary

35. A discussion of any violations or exceedances that occurred during the reporting period, all actions taken or planned for correcting or preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions.
36. If a pond liner performance evaluation was conducted during the reporting period, description of any liner maintenance, repairs, or modifications needed to maintain pond performance and provide an implementation schedule.
37. **Tier 4:** Description of any groundwater monitoring well maintenance, repairs, or modifications needed, planned, or completed during the reporting period and provide an implementation schedule.
38. Descriptions of any facility or BPTC improvements or modifications required by the facility NOA that were begun and/or completed during the reporting period and planned for the next reporting period. Include an implementation schedule.
39. Descriptions of any other notable repair or maintenance activities conducted this reporting period or planned for the next reporting period and provide the implementation schedule.

The Discharger shall implement the above monitoring program as of the NOA effective date.

Ordered by:

NAME, Executive Officer

DATE