General Waste Discharge Requirements for Commercial Vineyards in the North Coast Region

Attachment A: Monitoring and Reporting Program for Individual Enrollees

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Attachment A: Monitoring and Reporting Program for Individual Enrollees

I. Summary

Individual Enrollees shall conduct monitoring and reporting for all enrolled parcels on their commercial vineyard and shall refer to Attachment D: Methodologies and Procedures for sample collection and handling instructions. All water quality monitoring data (except Agricultural Drainage Structure Monitoring) shall be reported in a format consistent with Water Boards' various data management systems (e.g., surface water data to CEDEN, groundwater data to GeoTracker).

The Monitoring and Reporting Program (MRP) for Individual Enrollees consists of (1) Management Practice Effectiveness Monitoring; (2) Drinking Water Supply Well Monitoring; (3) Representative Pesticide and Groundwater Trend Monitoring; (4) Annual Compliance Reporting; and (5) Water Quality Trend Monitoring Reporting every five years.

Enrollees shall submit a Water Quality Monitoring Workplan to the Regional Water Board's Executive Officer which describes how they will implement the water quality monitoring and reporting requirements of this Order as summarized in Table A.1 and A2 below:

Table A.1: Monitoring Master Schedule

Requirement	Frequency	Where to Report
Management Practice Effectiveness Monitoring	Annually	Annual Compliance Report submitted to GeoTracker
Representative Pesticide Monitoring	Every five years	Trend Monitoring Report submitted to GeoTracker
Groundwater Trend Monitoring	Annually	Trend Monitoring Report submitted to GeoTracker.
Drinking Water Well Monitoring	Varies; see Section V.A of this MRP	Submitted to GeoTracker.

Table A.2: Reporting Master Schedule

Requirement	Elements of Report	Submittal deadline and Frequency
Water Quality Monitoring Workplan	Surface and Groundwater Quality Monitoring Workplans	By **July 1, 2028**, Submit to GeoTracker.

Requirement	Elements of Report	Submittal deadline and Frequency
Annual Compliance Report	Farm Evaluation, Irrigation and Nutrient Management Plan, Annual Management Practice Effectiveness Monitoring, CEQA Mitigation Measures, and Outreach event attended.	By **July 1, 2028** and by **July 1st** annually following initial submittal thereafter. Note that the Annual Water Quality Monitoring results are not due until the year after the Workplan is approved.
Water Quality Trend Monitoring Report (Trend Monitoring Report)	Representative Pesticide and Groundwater Trend Monitoring	Within five years of approval of Water Quality Monitoring Workplan and every five years by **July 1st** thereafter.

II. Water Quality Monitoring Workplan

1) A Water Quality Monitoring Workplan (Workplan) shall be submitted to the Regional Water Board's Executive Officer for review and approval by the date listed in Table A.2.

2) The Workplan shall present proposed monitoring sites, work tasks, milestones, and method(s) used to evaluate data to comply with all monitoring requirements and parameters in this MRP.

3) The Workplan shall include a map and description of stormwater discharge points that are representative of the range in tributary area, slope, soil type, and farming practices across the applicable enrolled parcels to characterize conditions and trends for purposes of pesticide monitoring.

4) The Workplan shall map and identify a sufficient number[1] of monitoring wells to characterize conditions and trends in groundwater quality across their enrolled parcels. The Workplan shall consider the following in well determination: (1) Soil type and saturated hydraulic conductivity of soil; (2) Existing water quality data; (3) Depth to groundwater; (4) Absence of nearby domestic/commercial wastewater disposal and/or biosolids application to avoid effects of other nitrate sources; (5) the distribution of wells within both high and low vulnerability groundwater areas[2] in the enrolled parcels; and (6) proximity to Drinking Water Supply Wells (public and private).

5) The Workplan map shall include all enrolled parcels of the commercial vineyard and may be an aerial photograph, topographic map, LiDAR-derived shaded relief map, Google Earth image, or equivalent that depicts features at 1-inch = 50 feet or larger scale.

6) The Workplan shall include methodology(s) to: (1) evaluate trends in groundwater monitoring data, (2) evaluate pesticide concentration trends in surface water monitoring data, and (3) determine statistical increases of pesticide concentrations in surface water quality monitoring data.

7) The Workplan shall include a Quality Assurance Project Plan (QAPP) that outlines procedures used to ensure the required data that is collected and analyzed meet requirements of this MRP. The QAPP shall be consistent with guidance provided by the State Water Resources Control Board (State Water Board) Quality Assurance/Quality Control[3] and the sampling collection and handling procedures outlined in Attachment D: Methodologies and Procedures.

8) By **July 1st,** five years following approval of the Workplan and every five years thereafter, a Water Quality Trend Monitoring Report (Trend Monitoring Report) that presents and analyzes all water quality monitoring results in the previous five years shall be submitted. The scope and contents of the Trend Monitoring Report are covered in Section VI.A of this MRP.

III. Management Practice Effectiveness Monitoring

Enrollees shall conduct Management Practice Effectiveness Monitoring based on the Implementation Standard of the Sediment and Erosion Control Compliance Option they have chosen in accordance with Section II.C of the Order. Enrollees will either be required to conduct Agricultural Drainage Structure Turbidity Monitoring or Photo-point Monitoring. The purpose of Management Practice Effectiveness Monitoring is to (1) assess the effectiveness of management practices at preventing erosion and controlling sediment discharge; and (2) drive Adaptive Management.

A. Agricultural Drainage Structure Turbidity Monitoring Requirements

1) The Enrollee shall annually monitor turbidity values in at least 20 percent of Agricultural Drainage Structures at the outlet that discharges from the Farm Area to surface waters. Enrollees shall choose monitoring locations that are representative of the range in tributary area, slope, soil type, and farming practices across the applicable enrolled parcels. Upon notice from the Executive Officer that monitoring locations chosen by the Enrollee are not representative, the Enrollee shall propose and begin implementing for monitoring new locations for concurrence by the Executive Officer. The Executive Officer has the discretion to determine representative or additional monitoring locations.

2) Turbidity values in Agricultural Drainage Structures shall be monitored during a Qualifying Storm Event from the first two hours of discharge which occurs during daylight hours using a calibrated[4] turbidity meter (turbidimeter), either on-site or at an accredited lab. Acceptable laboratory test methods include Standard Method 2130 or USEPA Method 180.1[5]. Results shall be recorded in Nephelometric Turbidity Units (NTU). Representative discharge for the purposes of Agricultural

Drainage Structure Sampling should not include periods of inundation from flood waters.

3) Samples shall be collected, maintained, and shipped in accordance with the current version of the SWAMP Quality Assurance Third-Party Plan[6] or the Sampling Collection and Handling procedures outlined in Attachment D: Methodologies and Procedures.

4) The Enrollee shall include annual Agricultural Drainage Structure Turbidity Monitoring results in the Annual Monitoring Report as described in Section VI.B of this MRP.

Exceedances of Turbidity Benchmark and Adaptive Management

5) If an Agricultural Drainage Structure exceeds the 250 NTU benchmark, the Enrollee shall, when it is safe and reasonable to do so, implement Temporary Sediment Controls[7] or management practices[8] to prevent or minimize erosion, control mobilization of sediment to that ag drainage structure and control the discharge of sediment from that ag drainage structure. Examples of temporary sediment controls may include but are not limited to hay bales and linear sediment controls such as silt fences and wattles. These in-season repairs shall be implemented in response to every ag drainage structure exceedance.

6) The Agricultural Drainage Structure at which the benchmark exceedance occurred shall be monitored in each subsequent Qualifying Storm Event following repair until there are no further exceedances, at which point the Enrollee may return to monitoring that location annually. If the Agricultural Drainage Structure continues to experience exceedances of the benchmark during the final QSE of the year, the Enrollee shall resume monitoring that location at the first QSE in the following year.

7) If an Agricultural Drainage Structure has exceedances of the 250 NTU turbidity benchmark in two consecutive years, the Enrollee shall continue to implement in-season repairs and attend a training focused on sediment and erosion control management practices. This event may also serve as the Enrollee's annual outreach and education event as required by the Order; however, the primary subject of the training must include sediment and erosion control management practices.

8) If an Agricultural Drainage Structure has exceedances of the 250 NTU turbidity benchmark in three consecutive years, the Enrollee shall implement in-season repairs and shall include in the Annual Compliance Report an Adaptive Management Assessment which is comprised of:

    a) A review of the management practices for compliance with approved management practices standards[9], and any needed management practice improvements to minimize or prevent erosion and the discharge of

sediment to surface water.

b) Photographs of all management practices implemented to minimize or prevent sediment discharge to that agricultural drainage structure or discharge point.

c) Documentation of education or attendance of outreach event focused on sediment erosion and control management practices.

9) If an agricultural drainage structure or drainage point has exceedances of the 250 NTU turbidity benchmark in four consecutive years, the Enrollee shall develop and implement a Water Quality Management Plan as described in Section II.E of the Order.

Offsite Stormwater Run-on

10) In the case of run-on from concentrated flow (including ag drainage structures) from Offsite Sources[10], the Enrollee may sample the run-on where it enters the planted area, Appurtenant Agricultural Roads, structures, or areas of the commercial vineyard and adjust the turbidity benchmark to 250 NTUs above the run-on turbidity value in all Agricultural Drainage Structures that receive discharge from that run-on location. In the case of multiple run-on sources into the same Agricultural Drainage Structure, the Enrollee may discount the run-on turbidity value from the source with the highest estimated flow rate.

11) In the case of run-on resulting in soil erosion on the enrolled parcel that delivers sediment to Agricultural Drainage Structure, the Enrollee may submit a demonstration to the Executive Officer that the soil erosion is solely attributable to the run-on that originates off the enrolled parcel, The determination shall include a map showing location(s) of run-on and run-on associated erosion, photographs, and all records necessary to demonstrate that the offsite run-on is solely responsible for erosion and sediment mobilization resulting in turbidity benchmark exceedance(s). The determination shall be certified by a Qualified Professional. Upon Executive Officer approval of this determination, the Enrollee shall continue sampling those impacted Agricultural Drainage Structures every five years and reporting results but is not obligated to perform adaptive management or corrective action in response to turbidity benchmark exceedances in the impacted ag drainage structure. An update of this determination shall be submitted to the Executive Officer for approval every five years in order for the Enrollee to be exempt from adaptive management or corrective action in response to turbidity benchmark exceedances. This update shall be certified by a Qualified Professional.

12) The Enrollee shall characterize the land-use source of the Offsite Stormwater run-on as part of submission of their Agricultural Drainage Structure Monitoring results. For each monitoring result in which the Enrollee either discounts the Offsite Stormwater run-on value or has submitted and received approval of a

determination by the Executive Officer, the Enrollee shall report the general land-use(s) immediately upslope that is the source of the run-on.

13) Onsite sources of waste discharge that are not appurtenant to the vineyard operation on the enrolled parcel(s) may be subject to a ROWD and individual waste discharge requirements, a WQMP, or another regulatory mechanism.

B. Photo-Point Monitoring Requirements

1) For Enrollees choosing Ground Cover as a Sediment and Erosion Control Compliance Option, one photo-point per Sediment Management Unit shall be established and annually monitored to verify that Ground Cover is present at a level the Regional Board has established to be effective at preventing, controlling, or minimizing sediment discharge to surface waters (i.e., 90%). Photo-points shall be depicted on the Enrollee's Farm Evaluation map. Photographs shall be appended to the Farm Evaluation.

2) For Enrollees with a Certified SECP, the objective of Photo-point Monitoring is a qualitative indication that implemented management practices are effective at preventing, controlling, or minimizing sediment discharge to surface waters. At a minimum, photo-points shall be established and annually monitored at the following locations: (1) at locations representative of the range in tributary area, slope, soil type, and farming practices across the applicable enrolled parcels to monitor Ground Cover and other applicable sediment and erosion control management practices; (2) at each Agricultural Drainage Structure; (3) at sites representative of the Appurtenant Agricultural Road network; and (4) at locations identified by the Qualified Professional which have been prioritized for management practice implementation or repair. Photos and associated field notes shall be appended to the Enrollee's Certified SECP.

3) Guidance regarding establishment and protocols for photo-point monitoring are provided by the NRCS Quick Guide to Photo Monitoring[11].

IV. Representative Pesticide Monitoring Requirements

1) Every five years, the Enrollee shall monitor a representative number of hydrologically-connected stormwater discharge points or Agricultural Drainage Structures at the location where stormwater leaves the Farm Area for any pesticide indicated in Table A.3 that the Enrollee has applied on the commercial vineyard within five years of the sampling event.

2) Water quality sampling for pesticides shall be conducted three times in the required monitoring year. The first sampling event shall take place within 48 hours of the first Qualifying Storm Event (QSE) after November 1st. The second sampling event shall take place within 48 hours of the first QSE following January 1st and the third sampling event shall take place within 48 hours of the first QSE following March 1st.

If a sampling event is missed for any reason, the Enrollee shall sample following the next QSE and include rationale in the results for why the sampling event was missed.

3) Enrollees shall include pesticide monitoring results in the Trend Monitoring Report and shall use a template provided by the Regional Board and available on its website. An Enrollee may submit alternative procedures and forms for consideration but must receive written approval from the Executive Officer before using them.

4) Samples shall be collected, maintained, and shipped in accordance with the current version of the SWAMP Quality Assurance Third-Party Plan or in accordance with the Sampling Collection and Handling Instructions in Attachment D: Methodologies and Procedures.

5) The appropriate USEPA analytical method shall be utilized to analyze all applicable analytes consistent with the Method Detection Limit.

Table A.3: Pesticide Monitoring Constituents and Trigger Limits

Active Ingredient	**Trigger Limit (µg / L)**	**Source[12]**
glyphosate potassium salt	700	DDW Primary MCL; USEPA Primary MCL.
pendimethalin	0.7	USEPA Aquatic Life Benchmark
fluopyram	135	USEPA Aquatic Life Benchmark
boscalid	116	USEPA Aquatic Life Benchmark
azoxystrobin	20	USEPA Aquatic Life Benchmark
trifloxystrobin	2.76	USEPA Aquatic Life Benchmark
imidacloprid	0.01	USEPA Aquatic Life Benchmark
myclobutanil	220	USEPA Aquatic Life Benchmark
tebuconazole	11	USEPA Aquatic Life Benchmark
oryzalin	13	USEPA Aquatic Life Benchmark
oxyfluorfen	0.33	USEPA Aquatic Life Benchmark

Active Ingredient	**Trigger Limit (µg / L)**	**Source[12]**
flumioxazin	0.022	USEPA Aquatic Life Benchmark
pyraclostrobin	1.18	USEPA Aquatic Life Benchmark
glufosinate-ammonium	3	USEPA IRIS Reference Dose (RfD) as a drinking water level.
cyprodinil	8.2	USEPA Aquatic Life Benchmark
quinoxyfen	13	USEPA Aquatic Life Benchmark
difenoconazole	0.86	USEPA Aquatic Life Benchmark
spirotetramat	100	USEPA Aquatic Life Benchmark
bifenazate	150	USEPA Aquatic Life Benchmark
acetamiprid	2.1	USEPA Aquatic Life Benchmark
thiamethoxam	0.74	USEPA Aquatic Life Benchmark

6) If a pesticide is detected above the MDL, the Enrollee will annually monitor for that pesticide in that location until there is no detection above the MDL in any sampling event for two consecutive years, after which point monitoring may occur every five years.

7) If a pesticide is detected in any sampling event for four consecutive years in any monitoring location, the Enrollee shall analyze monitoring results for that pesticide in that monitoring location for trends in the Trend Monitoring Report. If there is no statistical increase in concentration of that monitored pesticide, the Enrollee may resume sampling every five years.

8) If there is a five-year increasing trend in concentration of a pesticide or the pesticide is detected above the Trigger Limit, the Enrollee shall develop a Water Quality Management Plan in accordance with Section II.C.5 of this Order.

V. Groundwater Quality Monitoring Requirements

The evaluation of groundwater quality focuses on two primary areas: (1) drinking water supply well monitoring and (2) groundwater trend monitoring. The purpose of drinking water supply well monitoring is to monitor drinking water wells for nitrate and pesticide exceedances and notify well users of the potential for human health impacts. The purpose of groundwater quality trend monitoring is to evaluate regional trends in groundwater nitrate concentrations associated with commercial vineyards.

Drinking Water Supply Well Monitoring is not included in the Workplan and shall be conducted independent of Workplan approval.

A. Drinking Water Well Sampling

The purpose of drinking water supply well monitoring is to: (1) identify drinking water wells that have nitrate concentrations that exceed the Maximum Contaminant Level (MCL) of 10 mg/L (milligrams per liter) of nitrate+nitrite as N; (2) identify drinking water wells that have California Department of Pesticide Regulation (CDPR) 6800(a) list[13] pesticide concentrations that exceed the Human Health Reference Level (HHRL), the Primary MCL, or the Public Health Goal; and (3) notify any users of those wells of the potential for human health impacts

General Monitoring Requirements

1) Enrollees shall sample all private Drinking Water Supply Wells [14] located on their enrolled parcels for nitrates. Enrollees shall sample in one representative private drinking water supply well for CDPR 6800(a) listed pesticides that the Enrollee has applied on any of their enrolled parcels in the previous five years.

2) The initial sampling event must be completed in time to allow for the results to be submitted electronically to the State Water Board's GeoTracker database by **July 1, 2028**, and by July 1st thereafter.

3) Groundwater samples shall be collected using proper sampling methods, chain-of custody, and quality assurance/quality control protocols. Groundwater samples shall be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample shall be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

4) Laboratory analyses for groundwater samples shall be conducted by an Environmental Laboratory Accreditation Third-Party (ELAP)-certified laboratory according to the USEPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses shall be performed in accordance with the latest edition of Test Methods for Evaluating Solid Waste, SW-846, USEPA[15], and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories and program information can be found on the Water Board's ELAP website (https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.html).

5) All drinking water supply well monitoring data, including any existing data, shall be submitted electronically to the State Water Board's GeoTracker database by the testing laboratory. The data submitted shall include the Assessor's Parcel Number (APN) where the drinking water supply well is located and the coordinates (latitude and longitude) of the drinking water supply well.

Drinking Water Well Sampling for Nitrates

6) Initial Sampling: Enrollees shall conduct annual drinking water supply well sampling for nitrates for three years from all drinking water wells located on enrolled parcels. In lieu of one or more of these initial three annual tests, Enrollees may submit one or more annual drinking water supply well sampling results from one or more of the five prior years, provided: (1) nitrate sampling of a drinking water well was completed prior to enrollment in the Order; and (2) sampling and testing for nitrates and pesticides were completed using USEPA-approved methods and by an ELAP-certified laboratory.

7) Sampling Frequency: If the nitrate concentration is above 5 mg/L nitrate+nitrite as N in any of the first three annual samples, Enrollees shall continue conducting annual drinking water supply well sampling for nitrates. If the nitrate concentration is below 5 mg/L nitrate+nitrite as N in three consecutive annual samples, Enrollees may conduct sampling every five years. Sampling once every five years may continue unless the nitrate concentration exceeds 5 mg/L in any sample, in which case the Enrollee must sample annually until the nitrate concentration is below 5 mg/L for three consecutive years. An alternative sampling schedule based on trending data for the well may be required by the Executive Officer at any time.

8) Terminating Sampling: Sampling may cease if a drinking water well is taken out of service or no longer provides drinking water because sufficient replacement water is being supplied. Enrollees shall keep any records (e.g., photos, bottled water receipts) establishing that the well is not used for drinking water.

9) Exceedances: If water in any well that is used for drinking water exceeds 10 mg/L of nitrate+nitrite as N, the Enrollee shall provide notice to the drinking water well users within 10-days of learning of the exceedance and send a copy of the notice to the Regional Water Board. If the Enrollee is not the owner of the parcel enrolled in the Order, the Enrollee may provide notice instead to the owner within 24 hours of learning of the exceedance, and the owner shall provide notice to the drinking water well users within nine days and send a copy of the notice to the Regional Water Board.

10) Form of Notice: At a minimum, the Enrollee or non-Enrollee owner shall notice drinking water well users of the exceedance by providing them a copy of a Drinking Water Notification Template approved by the Executive Officer. The template shall be signed by the Enrollee or non-Enrollee owner certifying notice has been provided to the users. A copy of the signed template shall be sent to the Regional Water Board and retained by the Enrollee or non-Enrollee owner.

Drinking Water Supply Well Sampling for Pesticides

11) Sampling: Enrollees shall sample one representative[16] well every five years for any CDPR 6800(a) listed pesticides that were applied on any of the Enrollee's enrolled

parcels in the five years prior. In lieu of the initial sample, Enrollees may submit drinking water supply well sampling results from the five prior years, provided: (1) sampling of a drinking water well for the pesticide(s) was completed prior to enrollment in the Order; (2) sampling and testing for the pesticide(s) were completed using USEPA-approved methods and by an ELAP-certified laboratory; and (3) that sampling event occurred at least one year following the application of the pesticide(s).

12) Sampling Frequency: If the sampled concentration of a pesticide exceeds any of the following three values: (1) the CDPR Human Health Reference Level (HHRL)17, (2) the Primary MCL, or a (3) Public Health Goal, the Enrollee shall sample all their drinking water wells for that pesticide in the following year. Annual sampling shall continue for all wells exceeding the HHRL or water quality objective for that pesticide until the concentration is below the HHRL and water quality objective for two consecutive years. Enrollees may then sample for that pesticide once every five years until the pesticide has not been applied in any of the five years prior to the sampling year. The Enrollee may then cease sampling for that pesticide. An alternative sampling schedule based on trending data for the well may be required by the Executive Officer at any time.

13) Terminating Sampling: Sampling may cease if a drinking water well is taken out of service or no longer provides drinking water because sufficient replacement water is being supplied. Enrollees shall keep any records (e.g., photos, bottled water receipts) establishing that the well is not used for drinking water.

14) Exceedances: If water in any well that is used for drinking water exceeds CDPR's HHRL, the Primary MCL, or a Public Health Goal, the Enrollee shall provide notice to users of the drinking water well within 10 days of learning of the exceedance and send a copy of the notice to the Regional Water Board. If the Enrollee is not the owner of the parcel enrolled in the Order, the Enrollee may provide notice instead to the owner within 24 hours of learning of the exceedance, and the owner shall provide notice to the drinking water well users within nine days and send a copy of the notice to the Regional Water Board.

15) Form of Notice: At a minimum, the Enrollee or non-Enrollee owner shall notice drinking water well users of the pesticide exceedance by providing them: (1) location of the drinking water well in which the exceedance occurred, (2) CDPR's Pesticide Information and Use Fact Sheet[18] and CDPR's Drinking Water Standards Fact Sheet[19] and (3) a copy of a Drinking Water Notification Template approved by the Executive Officer. The template shall be signed by the Enrollee or non-Enrollee owner certifying notice has been provided to the users. A copy of the signed template shall be sent to the Regional Water Board and retained by the Enrollee or non-Enrollee owner.

B. Groundwater Quality Trend Monitoring

The objectives of Groundwater Quality Trend Monitoring are: (1) to determine current groundwater quality conditions associated with commercial vineyards, and (2) to develop long-term groundwater quality information that can be used to evaluate regional groundwater quality impacts from commercial vineyards. This section provides the objectives and minimum sampling and reporting requirements for Groundwater Quality Trend Monitoring.

Monitoring Requirements

1) Minimum Parameters and Frequency: Monitoring wells shall be sampled, at a minimum, annually at the same time of the year and analyzed at least for the indicator parameters identified in Table A.4 below.

2) Monitoring Network: Details for wells proposed for groundwater monitoring in the Workplan shall include:

    a) GPS coordinates.

    b) California state well number (if known).

    c) Total well depth.

    d) Top and bottom depths of well casing perforations.

    e) A copy of the water well drillers log (if available).

    f) Depth of standing water (static water level), if available (this may be obtained after implementing the Coalition).

    g) Well seal information (type of material, length of seal).

3) Sampling Requirements: Groundwater samples shall be collected using proper sampling methods, chain-of custody, and quality assurance/quality control protocols. Laboratory analyses for groundwater samples shall be conducted by an ELAP-certified laboratory according to the USEPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses shall be performed in accordance with the latest edition of Test Methods for Evaluating Solid Waste, SW-846, USEPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found on the Water Board's ELAP website (https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.html).

4) Data Submission: Groundwater monitoring data shall be submitted electronically to the State Water Board's GeoTracker database annually by the testing laboratory and included in the Annual Compliance Form as detailed in Section VI.B. The annual reports shall include a map of the sampled wells, tabulation of the analytical data, and time concentration charts.

5) Results for the five years preceding the Water Quality Trend Monitoring Report shall be included and shall be analyzed for trends within that report as detailed in Section VI.A of this MRP.

Table A.4: Individual Groundwater Monitoring and Minimum Frequency

Trend Monitoring Parameters	Units	Analysis Type	Frequency
pH	pH units	Field	Annually
Conductivity (at 25º C)	µmhos/cm	Field	Annually
Temperature	ºC	Field	Annually
Nitrate as Nitrogen	mg/L	Laboratory	Annually
Total Dissolved Solids (TDS)	mg/L	Laboratory	Annually

VI. Reporting Requirements:

1) Enrollees shall comply with the following reporting requirements and schedule outlined in Tables A.1 and A.2.

2) The Individual Enrollee shall create a GeoTracker user account. Instructions for setting up an account and the process of claiming a site, formatting, and uploading data, and other technical information can be found under “ESI Overview” and “Getting Started” sections on the State Water Board’s website[20].

3) Groundwater monitoring analytical data shall be uploaded to GeoTracker in an Electronic Deliverable Format (EDF). Additionally, monitoring data, monitoring reports, and correspondence shall be in searchable Portable Document Format (PDF) and shall be uploaded annually to GeoTracker.

A. Water Quality Trend Monitoring Report (Trend Monitoring Report)

The Trend Monitoring Report shall be submitted on July 1st five years following approval of the Water Quality Monitoring Plan and by July 1st every year thereafter. The Trend Monitoring Report shall cover the monitoring periods from the previous five calendar years and shall include the following components:

1) A signed transmittal letter shall accompany each report. The transmittal letter shall be submitted and signed in accordance with the requirements of Section II.H: Provisions of the Order.

2) Title page.

3) Table of contents.

4) Executive summary.

5) Monitoring objectives and design.

6) Sampling site/monitoring well descriptions and rainfall records for the time period covered under the Trend Monitoring Report.

7) Location map(s) of sampling sites/monitoring wells.

8) Results of all surface water and groundwater analyses. In reporting monitoring data, the Enrollee shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the data collection requirements of the MRP.

9) Discussion of data. The report shall include a discussion of the Enrollee's compliance with the data collection requirements of the MRP. If a required component was not met, an explanation for the missing data shall be included. Results shall also be compared to water quality objectives and trigger limits.

10) Sampling and analytical methods used.

11) Electronic laboratory data reports of chemical results must include analytical results, as well as associated quality assurance data including method detection limits, reporting limits, matrix spikes, matrix spike duplicates, laboratory blanks, and other quality assurance results required by the analysis method. The Enrollee may ask the laboratory to provide assistance with evaluation of their QA/QC data, provided that the Enrollee prepares the summary table or narrative description of the results for the Trend Monitoring Report.

12) Summary of turbidity benchmark exceedances from the past five years of Agricultural Drainage Structure Monitoring, pesticide detections above the MDL, and pesticide exceedances of the Trigger Limits.

13) Actions taken to address turbidity benchmark exceedances that have occurred, including but not limited to, revised or additional management practices implemented.

14) Evaluation of monitoring data to identify spatial trends and patterns.

    a) The Enrollee shall evaluate its monitoring data in the Trend Monitoring Report to identify potential trends and patterns in surface water and groundwater quality that may be associated with waste discharge from their property.

    b) Wherever possible, the Enrollee should utilize tables or graphs that

illustrate and summarize the data evaluation.

c) Conclusions and recommendations.

B. Annual Compliance Report

The Annual Compliance Report shall be uploaded to GeoTracker by **July 1, 2028**, and by July 1st annually thereafter and shall consist of the following elements:

Farm Evaluation: inventory of management practices to control the discharge of sediment, pesticides and nutrients from the Farm Area and identification of wells, watercourses, and appurtenant structures. See Section VI.B below.

Irrigation and Nutrient Management Plan: Inventory of management practices to control the movement of nutrients to groundwater and reporting of Nitrogen Applied and Removed. See Section VI.B below.

Annual Water Quality Monitoring Results: Results of a) Ag Drainage Structure Sampling if applicable (See Section III), and b) Groundwater Quality Monitoring (see Section V.).

Outreach Event Attendance: The Enrollee shall report on the annual outreach event attended in the previous year.

CEQA Mitigation Monitoring: The Enrollee shall report on the CEQA Mitigation Measures in Attachment D employed to comply with the provisions of the Order.

Farm Evaluation

1) The Farm Evaluation shall indicate the management practices already in place and describe modifications to existing management practices or additional management practices that have been or will be implemented and maintained to comply with all conditions of this Order.

2) Enrollees shall use the Farm Evaluation Template approved by the Regional Water Board's Executive Officer and available on the Regional Water Board website, or an alternate template approved by the Executive Officer. At a minimum, the Farm Evaluation Template will include the following:

   a) Owner/Operator Identification: The name, business address, mailing address, email address, phone number of the owner and operator (if different from owner).

   b) Commercial Vineyard Identification: Location(s) of commercial vineyard parcel(s) under contiguous ownership, including: (1) the address, (2) the Assessor Parcel Numbers (APNs) and the county in which each parcel is located, (3) the Township, Range, and Section (TRS) of each enrolled APN;

and (4) the total acreage under cultivation for each APN.

c) Vineyard Map: A vineyard map shall include all enrolled parcels and may be an aerial photograph, topographic map, LiDAR-derived shaded relief map, Google Earth image, or equivalent that depicts features at 1-inch = 50 feet or larger scale. The vineyard base map(s) shall include a north arrow and label the following appurtenant features on all enrolled parcels: (1) Streamflow diversion structures; (2) Agricultural Drainage Structures; (3) Farm buildings[21] and equipment yards; (4) Appurtenant Agricultural Roads; and (5) Photo-points, if applicable.

d) Sediment and Erosion Control Option and Implementation Standard: The Enrollee shall indicate which Sediment and Erosion Control Compliance Option and Implementation Standard was chosen. If changing Compliance Options for the next growing season, the Enrollee must indicate that change.

e) Management Practices: A list of management practices implemented to prevent erosion and control the discharges of sediment, nutrients, and pesticides from the Farm Area, Appurtenant Agricultural Roads (including All-Season and Seasonal Roads (e.g., vineyard avenues)) and Streamside Areas

f) Irrigation and Nutrient Management: (1) A list of management practices implemented within each parcel to minimize or prevent discharges of nutrients to surface waters and to minimize leaching of nitrogen past the root zone, (2) Primary and secondary irrigation methods for each APN, and (3) irrigation management practices to minimize or prevent surface run-off or groundwater leaching.

g) Well Identification: The number of (1) irrigation wells, (2) Drinking Water Supply Wells, and (3) abandoned or inactive wells associated with each enrolled APN. Each well shall be given a unique Well ID.

h) Certification of Maintenance: The Enrollee shall certify on their Farm Evaluation that all management practices are designed, installed, maintained, and promptly repaired in accordance with Section II.C of the Order.

i) Stormwater or Agricultural Drainage Structure Sampling Points (if applicable): Labeled Sampling Points for every storm water discharge point or Agricultural Drainage Structure at its furthest downstream location on the commercial vineyard for which the discharge is in hydrologic connection[22] to surface waters.

Irrigation and Nitrogen Management Plan

3) Enrollees shall prepare and implement an Irrigation and Nitrogen Management Plan (INMP) for each parcel and submit the INMP to the Regional Water Board for the previous crop year as part of the Annual Compliance Form in accordance with the schedule in Tables A.1 and A.2.

4) Enrollees identified as nitrogen application and removal (AR) outliers by the Regional Water Board, based on enrolled Enrollees in their Township, Range and Section (TRS), shall ensure the next INMP is prepared by an irrigation and nitrogen management planning specialist or self-certify their INMP[23]. On their certified INMP, these Enrollees shall report that they were notified as outliers for reported AR data and the INMP reflects additional or improved management practices implemented to address the potential over-application of nitrogen.

5) Where this Order requires reporting by parcel, Enrollees may aggregate data for a portion of a parcel or for multiple parcels provided that the reported area has (1) the same fertilizer inputs, (2) the same irrigation management, and (3) the same management practices. In no case should a reported area exceed a total size of 640 acres. These “Nitrogen Management Units’ shall be defined, labeled and consistent across all INMP and Farm Evaluation reporting.

6) Enrollees shall use the INMP Template approved by the Regional Water Board’s Executive Officer. At a minimum, the INMP will collect the following information:

    a) Crop Year.

    b) Owner/Manager name.

    c) Assessor Parcel Number (APN).

    d) Acreage for each APN identified.

    e) Crop age.

    f) Irrigation method(s).

    g) Crop Yield (tons/acre)

    h) Nitrogen Applied (lbs./acre) from the following sources:

        i) All applied water (e.g., irrigation, frost protection, recycled water, winery process wastewater, etc.)

        ii) Synthetic Fertilizers, and/or

        iii) Organic Amendments (e.g., grape pomace, manure, compost, etc.)

    i) Documented outreach and education received or attended during the

previous year in accordance with Section II.C.4 of this Order.

7) Enrollees shall use this information to calculate the Applied/Removed (A/R) ratio for nitrogen, and an Applied-Removed (A-R) difference for nitrogen, as defined in the equations in Table A.2. These shall be submitted in the Annual Compliance Report in accordance with the schedule outlined in Tables A.1 and A.2.

8) Every third reporting year, Enrollees shall average the past 3 years of their AR Reporting and provide a 3-year A/R Ratio and A-R Difference in the Annual Compliance Form as defined in the equations in Table A.5.

Table A.5: Nitrogen Reporting Equations

Description	Equation
The A/R ratio is the ratio of total Nitrogen Applied[24]to Nitrogen Removed[25](including all harvested materials and nitrogen annually sequestered in woody material)	$$\text{A/R Ratio} = \frac{\text{Nitrogen Applied (lbs./acre)}}{\text{Nitrogen Removed (lbs./acre}}$$
For each parcel for which three consecutive years of A/R ratio is available, the multi-year A/R ratio shall be reported as the ratio of total nitrogen applied to total nitrogen removed (calculated below) for the three prior consecutive years	$$A/R_{3\ year}\ \text{Ratio} = \frac{A_n + A_{n-1} + A_{n-2}}{R^n + R_{n-1} + R_{n-2}}$$ Where n = current reporting cycle A = Nitrogen Applied R = Nitrogen Removed
The A-R difference is the difference of total Nitrogen Applied and the total Nitrogen Removed	A-R Difference= Nitrogen Applied (lbs./acre) – Nitrogen Removed (lbs./acre)
The multi-year A-R difference shall be reported as the numerical difference between total nitrogen applied and total nitrogen removed for the three prior consecutive years.	$A\text{-}R_{3\ year}$ Difference= $[A_n + A_{n-1} + A_{n-2}] – [R_n + R_{n-1} + R_{n-2}]$ Where n = current reporting cycle A = Nitrogen Applied R = Nitrogen Removed
Total Nitrogen Removed is determined by multiplying a Enrollee's crop yield by a crop-specific nitrogen coefficient, (C_N) which represents the amount of nitrogen in the harvested crop. The C_N coefficient may be obtained through a University of California Viticultural advisor, an irrigation and nutrient planning specialist, the Regional Water Board, or through literature.	Nitrogen Removed (lbs./acre) = Crop Yield (tons/acre) x C_N (lbs./tons)

Annual Water Quality Monitoring Results

9) The Enrollee shall submit results of water quality monitoring for all applicable annual monitoring requirements. The initial submittal will be by July 1st in the year following approval of the Water Quality Monitoring Workplan and by **July 1st** annually thereafter.

10) The annual report shall include a map of applicable monitoring locations, sampled wells, tabulation of the analytical data, and concentration trend charts. All water quality data are to be submitted electronically in EDF format to the State Water Board's GeoTracker Database.

11) The Enrollee shall submit groundwater field measurements and laboratory analysis results as they are available in an electronic format. The annual water quality monitoring data results shall include the following for the required reporting period:

    a) All surface and groundwater monitoring data in tabular form. For each Agricultural Drainage Structure monitoring result in which the Enrollee either discounts the Offsite Stormwater run-on value or has submitted and received approval of a determination by the Executive Officer, the Enrollee shall report the general land-use(s) immediately upslope that is the source of the run-on.

    b) Electronic copies of all field sheets.

    c) Electronic copies of photos obtained from all Agricultural Drainage Structure Monitoring sites, clearly labeled with location code and date.

    d) Electronic copies of all applicable laboratory analytical reports shall be submitted once per year with the Annual Compliance Report.

    e) Calibration logs from all turbidimeters used in sampling.

    f) For chemistry data, analytical reports shall include, at a minimum, the following:

        i) A lab narrative describing quality control failures.

        ii) Analytical problems and anomalous occurrence.

        iii) Chain of custody and sample receipt documentation.

        iv) All sample results for contract and subcontract laboratories with units. Reporting Limits and Method Detection Limits.

        v) Sample preparation, extraction, and analysis dates.

        vi) Results for all quality control samples including all field and laboratory blanks, lab control spikes, matrix spikes, field and laboratory duplicates,

and surrogate recoveries.

12) If any data is missing from the annual report, the submittal shall include a description of what data is missing and when it will be submitted to the Regional Water Board.

Outreach Event Attendance

13) As part of the Annual Compliance Report, the Enrollee shall submit outreach event attendance information. At a minimum, the outreach event records shall include:

    a) Date of annual outreach event attended,

    b) Type of outreach event (e.g., in-person meeting, online video, printed materials), and,

    c) Brief description of topics covered.

CEQA Mitigation Monitoring

As part of the Annual Compliance Report, the Enrollee shall report on the CEQA mitigation measures in Attachment E employed to comply with provisions of the Order. The CEQA Mitigation Monitoring reported in the Annual Compliance Report shall include information on the implementation of CEQA mitigation measures (mitigation measures are described in Attachment E of the Order), including the measure implemented, identified potential impact the measure addressed, parcel(s) where of the mitigation measure was employed, and any steps taken to monitor the ongoing success of the measure.

VII. Attachment A Endnotes

[1] Enrollees may reference Department of Water Resources guidance document Section D (Degraded Water Quality) to determine sufficient monitoring well network for groundwater quality assessment (https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-2-Monitoring-Networks-and-Identification-of-Data-Gaps_ay_19.pdf).

[2] High vulnerability groundwater areas are groundwater basins designated as priority groundwater basins for salt and nitrate planning based on the 2021 North Coast Groundwater Basin Prioritization Resolution (https://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2021/21_0006_Groundwater_Basin_Prioritization_Resolution.pdf). Low vulnerability groundwater areas are groundwater basins not designated as 'priority basins.' See 'high-vulnerability groundwater' in Appendix 1: Acronyms and Definitions.

[3] See the QA/QC Program (https://www.waterboards.ca.gov/water_issues/programs/quality_assurance/qapp.html).

[4] Calibration logs shall be kept with the instrument and submitted with the Annual Water Quality Monitoring Report as required in Section VII.D.

[5] See USEPA Method 180.1 (https://www.epa.gov/sites/default/files/2015-08/documents/method_180-1_1993.pdf).

[6] See the SWAMP Quality Assurance Plan (https://www.waterboards.ca.gov/water_issues/programs/swamp/quality_assurance.html).

[7] Temporary Sediment Controls are Temporary sediment control best management practices (BMPs) are short-term measures that should be considered during a period where areas are disturbed due stormwater runoff, farming activities, or maintenance. A temporary sediment control BMP is normally used for 1—6 months, or until a more permanent BMP is put into place. Temporary sediment control BMPs are typically used in conjunction with erosion control BMPs and are designed and installed to keep as much sediment on-site as possible. Examples of temporary sediment controls could include, but are not limited to Linear Sediment Controls, dikes and berms, check dams, sediment basins, and inlet/outlet protection.

[8] Accepted sediment and erosion control management practice standards and design can be found in the NRCS-USDA National Conservation Practice Standards; USEPA's National Management Measures to Control Nonpoint Source Pollution from Agriculture; Handbook of Forest, Ranch, and Rural Roads; A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining, and Closing Wildland Roads; California's Management Measures for Polluted Runoff; Best Management Practices for VESCO Agricultural Erosion and Sediment

Control; The Land Steward's Guide to Vineyard and Orchard Erosion Control; the California Code of Sustainable Winegrowing Workbook, and the California Stormwater Quality Association BMP Handbook.

[9] Accepted sediment and erosion control management practice standards and design can be found in the NRCS-USDA National Conservation Practice Standards, USEPA's National Management Measures to Control Nonpoint Source Pollution from Agriculture ; Handbook of Forest, Ranch, and Rural Roads, A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining, and Closing Wildland Roads , California's Management Measures for Polluted Runoff ; Best Management Practices for VESCO Agricultural Erosion and Sediment Control ; The Land Steward's Guide to Vineyard and Orchard Erosion Control, the California Code of Sustainable Winegrowing Workbook , and the California Stormwater Quality Association BMP Handbook.

[10] Flows that originate from an area not located on the Enrollee's enrolled parcel and flow onto the Farm Area

[11] See the Quick Guide to Photo Point Monitoring https://efotg.sc.egov.usda.gov/references/public/NM/bio61a6_PhotoDocumentation_Protocol.pdf

[12] Trigger limit sources were determined from the lowest of numeric water quality thresholds. These thresholds are used to assess whether beneficial uses of surface water are likely to be impaired or threatened. USEPA Aquatic Life Benchmarks are based on toxicity values from scientific studies that EPA reviewed and used to estimate risk to freshwater organisms from exposure to pesticides and their degradates in their most recent publicly available ecological risk assessments and preliminary Problem Formulations written in support of pesticide registration or registration review. The USEPA Aquatic Life Benchmarks used were for chronic freshwater vertebrates and invertebrates benchmarks and nonvascular and vascular plants. For more information on Water Quality Goals, visit the State Water Board's website at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/

[13] Department of Pesticide Regulation 6800(a) list (https://www.cdpr.ca.gov/docs/legbills/calcode/040101.htm).

[14] Drinking Water Supply Wells are any domestic or irrigation Wells that are used to provide drinking water to residents, tenants, or farm employees.

[15] Test Methods for Evaluating Solid Waste, SW-846 (https://www.epa.gov/hw-sw846).

[16] Representative well shall be within the same HUC12 in which the pesticides were applied, or within the closest drinking water well if no drinking water Wells are within the HUC12 of the applied pesticide.

[17] CDPR HHRLs are available online (https://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_sampling.htm).

[18] Pesticide Information and Use Fact Sheet (https://www.cdpr.ca.gov/docs/dept/factshts/pesticide_info_and_use_gw.pdf).

[19] CDPR Pesticide Drinking Water Standards Fact Sheet (https://www.cdpr.ca.gov/docs/dept/factshts/pesticide_drinking_water_gw.pdf).
[20] GeoTracker electronic submittal of information (https://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).
[21] Farm buildings include equipment storage sheds, farmworker housing, and processing buildings.
[22] See definition in Appendix 1: Acronyms and Definitions.
[23] A certified Irrigation and Nitrogen Planning Specialist is a Certified Crop Advisor (CCA) who has completed the California Nitrogen Management exam through The California Department of Food and Agriculture (CDFA), the University of California – Davis, the American Society of Agronomy's (ASA) International Certified Crop Adviser (ICCA) Third-Party and/or the CCA – Western Region (WR) Board and takes the required continuing education credits. Enrollees may qualify as a Irrigation and Nitrogen Planning Specialist and self-certify their INMP if they take the CDFA Irrigation and Nitrogen Management Training for Grower Self-Certification, pass the Irrigation and Nitrogen Management Training and Exam and maintain the certification through continuing education (https://www.cdfa.ca.gov/is/ffldrs/frep/training.html).
[24] Nitrogen Applied – Nitrogen Applied includes all nitrogen proactively added to a vineyard from any source, such as organic amendments, synthetic fertilizers, manure, and irrigation water.
[25] Nitrogen Removed – Nitrogen Removed includes all nitrogen taken from the vineyard in harvested or other materials. Other materials may include wheat straw, orchard prunings, almond hulls, etc. In the case of perennial crops, Nitrogen Removed also includes the nitrogen annually sequestered in the permanent wood.