STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS

ORDER NO. R3-2021-0040-A1,
as amended by State Water Board Order WQ 2023-0081

April 15, 2021
Revised on October XX, 2026

ATTACHMENT B

MONITORING AND REPORTING PROGRAM

Dischargers shall implement the revised monitoring and reporting program as of the date of this revised MRP.

Ordered by:

_____ _____
Ryan E. Lodge, Executive Officer Date

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Section A. General Monitoring and Reporting Requirements

1. This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267, which authorizes the Central Coast Regional Water Quality Control Board (Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports (see **Attachment A, Section B, Cost Considerations**).

2. The Central Coast Water Board needs the information required by this MRP to determine compliance with Order No. R3-2021-0040-A1. The evidence supporting the need for and benefits to be obtained from these monitoring and reporting requirements is included in the Order (see Attachment A).

3. Pursuant to Water Code section 13268, a violation of a request made pursuant to section 13267 may subject the Discharger to civil liability of up to $1000 per day. Pursuant to Water Code section 13350, a violation of a request made pursuant to section 13350 may subject the Discharger to civil liability of up to $5000 per day.

4. Dischargers must submit reports in the format specified by the Executive Officer. Reports must be submitted electronically, unless otherwise specified by the Executive Officer. A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

   "In compliance with Water Code section 13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision, following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

5. All technical and monitoring reports submitted in compliance with this MRP must be complete and accurate. The submittal of an incomplete or inaccurate report does not constitute compliance with the requirement.

6. Unless otherwise noted,[1] all water quality analyses must be conducted at a laboratory certified for such analysis through a California Environmental Laboratory Accreditation Program (ELAP) and in accordance with approved standards and United States Environmental Protection Agency (USEPA)

[1] As noted in paragraph 12.c, below, it is acceptable for a Discharger to use either laboratory analysis or a portable measuring device to obtain precise measurements of nitrogen in irrigation wells for total nitrogen applied and irrigation and nutrient management plan summary reporting purposes.

methods.[2] Unless otherwise noted, all sampling, sample preservation, and analyses must 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.

7. Any laboratory data submitted to the Central Coast Water Board must be submitted by, or under the direction of, a state registered professional engineer, registered geologist, state certified laboratory, or other similarly qualified professional. Surface water quality data must be submitted electronically, in a format that is compatible with the California Environmental Data Exchange Network (CEDEN), or as directed by the Executive Officer. Groundwater quality data must be submitted in a format compatible with the electronic deliverable format (EDF) electronic data deliverable (EDD) criteria and protocols used by the State Water Board's GeoTracker data management system, or as directed by the Executive Officer.

8. Dischargers must provide the geographic information necessary to determine the Groundwater Phase Area and Surface Water Priority Area that applies to each individual ranch when they enroll or update their electronic Notice of Intent (eNOI).

9. Dischargers with wells on their ranch must indicate on their eNOI the number of domestic, dual-use, and irrigation wells that are in use on their ranch. Dischargers must also update their eNOI within 60 days when a new well is put in service, when a previously reported well is taken out of service (e.g., a well is either destroyed or becomes inactive) or when use of a previously inactive well resumes.

10. The Central Coast Water Board encourages Dischargers to participate in third-party monitoring programs to comply with monitoring and reporting requirements contained herein. Dischargers not participating in a third-party monitoring program must conduct required monitoring and reporting individually. Participation in a third-party monitoring program does not relieve Dischargers of the responsibility to comply with these requirements or of the requirement to have their ranch-level data reported to the Central Coast Water Board.

11. Dischargers must report on CEQA mitigation measure implementation electronically in the Annual Compliance Form (ACF).

[2] Certified laboratories can be found online at Environmental Laboratory Accreditation Program (ELAP) | California State Water Resources Control Board: https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.html

Section B. Irrigation and Nutrient Management Monitoring and Reporting Requirements

1. **By March 1 of each year**, all Dischargers, including those participating in a third-party alternative compliance pathway, must provide the Central Coast Water Board with either:

    a. A Total Nitrogen Applied (TNA) report, which includes applied nitrogen and irrigation information, or

    b. An Irrigation and Nutrient Management Plan (INMP) Summary report, which includes information from the TNA report, total nitrogen removed, and additional specific irrigation management information noted in paragraph 15 below.

2. A comparison of information required in TNA reporting versus INMP Summary reporting is included in **Table MRP-1**. TNA reports will be used to determine the relative contribution of nitrogen applied to a ranch from all sources. INMP Summary reports will be used to determine compliance with the nitrogen discharge targets established in the Order. Required information for both reports must be recorded for the calendar year prior to the report due date (for example, if a report is due March 1, 2024, the monitoring information must be recorded from January 1 through December 31, 2023). The physical area reported in each report form must represent no more than 640 acres; if a ranch is greater than 640 acres in size then multiple reports must be submitted.

3. Beginning January 1, 2026, Dischargers must begin recordkeeping for INMP Summary reports to be submitted the following year; however, the timeframe for when Dischargers transition from TNA reporting to the more comprehensive INMP Summary reporting is phased in over time, as shown in **Table MRP-2.** With the exception of Dischargers who were enrolled in Order No. R3-2017-0002 (Ag Order 3.0) and required to submit TNA reports under Ag Order 3.0, the timeframe for when a Discharger must begin conducting expanded INMP monitoring and INMP Summary reporting is based on a Discharger's Groundwater Phase area. Beginning January 1, 2026, every ranch will be required to maintain records including total nitrogen removed data in order to submit INMP Summary reports the following reporting year (2027).

4. For the first two years the Order is in effect (2021 and 2022), all Dischargers (regardless of Groundwater Phase area) who were required to submit TNA reports under Ag Order 3.0 must continue to conduct monitoring, recordkeeping, and reporting as described below for submittal of a complete and accurate TNA report **by March 1, 2022 and 2023**. This Ag Order 3.0 requirement for specific Dischargers will be superseded by requirements summarized in **Table MRP-2.** (i.e., according to Dischargers' ranch locations within specific Groundwater Phase areas).

5. Beginning in 2023, Dischargers in Groundwater Phase 1,[3] 2, and 3 areas must conduct monitoring and reporting associated with required TNA and/or INMP Summary reporting requirements in accordance with **Table MRP-2**.

TNA Report Requirements

6. On an annual basis, Dischargers required to submit the TNA report must monitor and report the total amount of nitrogen applied from all sources, as described below, including fertilizer nitrogen (**A_{FER}**), compost nitrogen (**A_{COMP}**), organic fertilizer nitrogen (**A_{ORG}**), irrigation water nitrogen (**A_{IRR}**), any other source of nitrogen (A_{OTHER}), nitrogen present in the soil, nitrogen concentration of the irrigation water, volume of irrigation water applied to the ranch, and additional information described, below.

7. Fertilizer nitrogen (**A_{FER}**) for each specific crop.

   Dischargers must monitor and report the total amount of nitrogen applied to the ranch from fertilizers during the reporting period. **A_{FER}** includes nitrogen applied from fertilizers and all other materials or products containing nitrogen except compost and organic fertilizer nitrogen (both tracked and reported separately), including but not limited to, inorganic fertilizers, fertilizers applied through the irrigation water (i.e., fertigation), foliar fertilizers, slow-release products, compost teas, manure, and compost or manure extracts.

8. Compost nitrogen (**A_{COMP}**) for the entire ranch.

   a. Dischargers must monitor and report the total amount of compost nitrogen applied to the ranch during the report period.

   b. If compost nitrogen is reported as **A_{COMP}** it should not also be included in the **A_{FER}** calculation (i.e., it should not be reported twice in the same report form).

9. Organic fertilizer nitrogen (**A_{ORG}**) by specific crop.

   a. Dischargers must monitor and report the total amount of organic fertilizer nitrogen applied to the ranch during the report period.

   b. If organic fertilizer nitrogen is reported as **A_{ORG}** it should be calculated and reported separately from **A_{FER}** (i.e., it should not be reported as part of **A_{FER}** to avoid double counting in the same report).

10. Irrigation water nitrogen (**A_{IRR}**) for the entire ranch.

[3] Dischargers in Groundwater Phase 1 areas are not required to submit a stand-alone TNA report; rather, due to the prioritization of Phase 1 areas, Dischargers in portions of the Gilroy-Hollister Valley (Llagas Area) groundwater basin, the Forebay Aquifer and Upper Valley subbasins of the Salinas Valley basin, the Santa Maria area of the Santa Maria River Valley basin, and the Santa Ynez River Valley basin must conduct the expanded monitoring and reporting associated with INMP Summary reporting before Dischargers in Groundwater Phase areas 2 and 3.

a. The amount of irrigation water nitrogen applied, **A_{IRR}**, is calculated using the nitrogen concentration of the irrigation water and the volume of water applied to the ranch during the reporting period.

b. **A_{IRR}** does not include liquid fertilizers applied during fertigation (i.e., fertigation nitrogen is accounted for in A_{FER} as noted above).

c. The volume of water used in this calculation must include all water applied, including water applied for irrigation, leaching, runoff, backflush, operational spills, etc. Rainwater should not be included in this calculation.

11. Any other nitrogen source (**A_{OTHER}**) for the entire ranch.

    Dischargers must monitor and report the total amount of nitrogen applied to the ranch from any other source during the reporting period. **A_{OTHER}** includes nitrogen applied from sources including but not limited to amendments and mulch.

12. Nitrogen present in the soil.

    a. Dischargers must conduct soil nitrogen monitoring to inform fertilizer application decisions for their ranch. Dischargers must measure and report the amount of soil nitrogen present in the soil at least once per reporting period. Soil nitrogen monitoring locations and frequencies should be representative of cropping patterns and soil types as needed to inform nitrogen management decisions.

    b. Dischargers should take a soil sample for laboratory analysis, use a nitrate quick test, or use an alternative method to evaluate nitrogen content in the soil prior to each crop planting, prior to seeding the field, prior to pre-side dressing, or when appropriate to determine nitrogen available in the soil for the current or following crop, prior to applying fertilizer nitrogen. These records must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

    c. Soil nitrogen content must be measured at the time of year or the stage during the crop cycle when soil nitrogen content is high and therefore should be accounted for as a source of nitrogen. Records describing the timing of the soil nitrogen monitoring and the rationale used to determine the timing must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

13. Nitrogen concentration of the irrigation water.

a. Dischargers must, at a minimum, obtain and report a precise[4] nitrogen concentration from the primary source of irrigation water (e.g., primary irrigation well, municipal supply water, recycled water, etc.) during the report period. If Dischargers obtain multiple precise nitrogen samples from their primary irrigation well, they must compute and report the average nitrogen concentration based on all samples taken.

b. Dischargers using an irrigation source for their ranch that is not located on their ranch property (e.g., sharing an irrigation well with a neighbor) are still responsible for obtaining a precise nitrogen concentration from the primary source of irrigation water.

c. Examples of methods used to obtain precise values include laboratory analyses and portable measuring devices. A method that produces a concentration range, such as a nitrate quick test strip, cannot be used to satisfy this requirement unless additional technology or methods are used to obtain a precise value from the test strip.

d. Where possible, Dischargers are encouraged to obtain precise nitrogen samples from all sources of irrigation water and compute a weighted average irrigation water nitrogen concentration. The weighted average is calculated using volume and concentration information from each water source. The methodology for calculating the weighted average is described below.

14. Volume of irrigation water applied to the ranch.

    a. Dischargers must, at a minimum, estimate and report the total volume of irrigation water applied to the ranch during the report period. Where possible, Dischargers are encouraged to measure the volume of irrigation water applied to the ranch or to each specific crop grown. Records describing the method used to estimate the volume of irrigation water applied must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

15. Additional information.

    a. Dischargers must report additional information required in the TNA report form, including acres of each specific crop grown, whether each specific crop was grown using organic or conventional methods, irrigation system type(s), and information describing the basis for the amount of nitrogen applied (e.g., University of California (UC) Farm Advisor consultation, on-farm research trials, trade publication, etc.).

[4] For the purposes of this MRP, “precise” represents an exact measurement (e.g., 2.5 mg/L or 4 mg/L), as opposed to a measurement expressed as a range (e.g. 1-5 mg/L).

INMP Summary Report Requirements

16. On an annual basis, Dischargers required to submit the INMP Summary report, in accordance with the schedule established in **Table MRP-2**, and all Dischargers beginning January 1, 2026, regardless of Groundwater Phase Area must monitor and report all nitrogen applied information noted in the TNA Report Requirements paragraphs above, in addition to the following specific irrigation management information and total nitrogen removed requirements:

    a. **Nitrogen concentration of irrigation water**: Dischargers must obtain sufficient samples to calculate the amount of nitrogen applied with the irrigation water to be used in determining compliance with nitrogen discharge targets. At a minimum, Dischargers must obtain and report a precise nitrogen concentration from **all** sources of irrigation water used for their ranch during the reporting period (i.e., all irrigation wells, rather than only the primary irrigation well for TNA reporting). Dischargers may obtain multiple samples per well to increase the accuracy of their reporting and improve their ability to utilize irrigation water nitrogen in place of fertilizer nitrogen. If Dischargers obtain multiple precise nitrogen samples from a given well, they must compute and report the given well's average nitrogen concentration based on all samples taken from that well.

    b. **Weighted average irrigation water nitrogen concentration for the ranch**: Dischargers **must** calculate and report a weighted average irrigation water nitrogen concentration for their ranch. The weighted average is calculated using volume and concentration information from each water source. The following equation must be used to compute the weighted average nitrogen concentration of irrigation water:

$$Weighted\ Average\ Concentration = \frac{((C1 * V1) + (C2 * V2) + (C3 * V3) + \cdots)}{(V1 + V2 + V3 + \cdots)}$$

    where C1 is the nitrogen concentration if well 1, V1 is the volume of well 1, C2 is the concentration of well 2, etc.

    c. **Volume of irrigation water applied to the ranch**: Dischargers **must measure** and report the total volume of irrigation water applied to the ranch during the reporting period. Dischargers must estimate, and are encouraged to measure, the volume of irrigation water applied to each specific crop.

    d. **Recordkeeping**: Dischargers must maintain records of all irrigation water sampling and all weighted average nitrogen calculations. Dischargers must also maintain records describing the method used to measure the volume of irrigation water applied to the ranch and/or to estimate or measure the irrigation water volume applied to each specific crop. These records must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

17. Dischargers must monitor and report information associated with all nitrogen removed from the field in annual INMP Summary reports.

    a. **Total nitrogen removed from the field (R) for each specific crop:** Dischargers must monitor and report the total amount of nitrogen removed from the field through harvest (R_{HARV}) and sequestration (R_{SEQ}) Dischargers may optionally monitor and report the total amount of nitrogen removed from the field through scavenging ($R_{SCAVENGE}$), treatment (R_{TREAT}), or other removal methods (R_{OTHER}).

$$R = R_{HARV} + R_{SEQ} + R_{SCAVENGE} + R_{TREAT} + R_{OTHER}$$

    b. **R_{HARV} = Conversion Coefficient x Material Removed**

        i. All Dischargers must monitor the total mass of each specific crop in pounds per acre removed from the field during the reporting period.

        ii. To calculate the amount of nitrogen removed from the field, Dischargers must either use a conversion coefficient provided by the Central Coast Water Board in **Table MRP-4** or develop and use their own conversion coefficient. Dischargers who elect to develop their own conversion coefficient must do so by obtaining a laboratory result from samples collected from their operation, or similar operation, following standard protocols to be developed by the Water Board in coordination with UCCE and CDFA and approved by the Executive Officer within 12 months of order adoption, to determine the nitrogen concentration in the crop material. Dischargers must maintain any data collected and rationale used in determining their individual conversion coefficient in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

        iii. For crops that do not yet have approved conversion coefficients[5] in **Table MRP-4**, Dischargers must either select a conversion coefficient for a crop that is similar to their crop or develop their own conversion coefficient, individually or cooperatively, following the approved standard protocol described above. Dischargers must maintain records detailing how and why they selected a particular conversion coefficient for their crop and, if applicable, information on the method used to obtain the conversion coefficient in the Farm Plan. These records must be submitted to the Central Coast Water Board upon request.

    c. **R_{SEQ}**

[5] Additional information on approved conversion coefficients can be found in Attachment D of the INMP instructions: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/tna/inmp-instructions.pdf

i. Dischargers with permanent or semi-permanent crops may determine the amount of nitrogen sequestered in their crops during the reporting year and quantify and report this as **R_{SEQ}** for use in their nitrogen applied minus nitrogen removed reporting. Dischargers must maintain any data collected and rationale used in determining the amount of sequestered nitrogen in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

d. **$R_{SCAVENGE}$ (optional)**

i. Dischargers with a cover crop, high carbon amendment, or high carbon woody materials that meets the definition of a nitrogen scavenging cover crop, nitrogen scavenging high carbon amendment, or high carbon woody materials as outlined below and also in Attachment A and Attachment C of this Order may determine the amount of nitrogen scavenged during the reporting year and quantify and report this as **$R_{SCAVENGE}$** for use in their nitrogen applied minus nitrogen removed reporting. Dischargers must maintain any data collected and rationale used in determining the amount of scavenged nitrogen in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request. The nitrogen scavenging credit is not used to determine compliance with Nitrogen Discharge Targets but may be used to evaluate nitrogen management efficiency and to inform prioritization for follow-up actions.

ii. Dischargers electing to report **$R_{SCAVENGE}$** must ensure that their cover crop, high carbon amendment, or high carbon woody materials meets the definition of a nitrogen scavenging cover crop, nitrogen scavenging high carbon amendment, or high carbon woody materials as outlined below and also in Attachment A and Attachment C of this Order.

1. **Option 1: Cover Crop.**
   i. A cover crop grown on a ranch to prevent leaching of nitrogen during the wet/rainy season. The cover crop must not contain nitrogen fixing plants. The cover crop must be grown for a minimum of three months during the wet/rainy season. The cover crop must have a minimum estimated biomass of 4,500 pounds of oven-dry matter per acre. Substantiating records must be retained in the Farm Plan and include dated photo documentation, locations of implemented practice, date(s) of seeding, estimated cover crop biomass and method to estimate, and type of cover crop seed.
2. **Option 2: High Carbon Amendments.**

i. High carbon material (e.g., almond shells, glycerol) added to the ranch to reduce nitrogen leaching in the wet/rainy season. The high carbon amendment must have a carbon to nitrogen ratio (C:N) greater than 30:1. The high carbon amendment must be finely ground to less than a quarter of an inch in diameter. The high carbon amendment must be incorporated into the top foot of soil. The high carbon amendment must be retained for a minimum of three months during the wet/rainy season. The high carbon amendment must have a minimum application rate of 10,000 pounds per acre. If glycerol is used as a high carbon amendment it must have a minimum application rate of 5,000 pounds per acre. Substantiating records must be retained in the Farm Plan and include dated photo documentation, locations of implemented practice, material and material size, confirmation that the material was incorporated into the first foot of soil, material application rate per acre, and testing or documentation to confirm the materials C:N ratio.

3. **Option 3: High Carbon Woody Mulch Materials.**
   i. Woody mulch materials from crops producing semi-permanent or permanent woody plant tissue, from crops of at least 6 months of age and with a carbon nitrogen ratio (C:N) greater than 30:1. Mulch must be applied at a minimum 2-inch thickness of particles and achieve a minimum 70-percent ground cover, or at a minimum of 3,000 pounds per acre woody mulch application. Crop mulching practices should follow recommendations outlined in NRCS Conservation Practice Standard for Mulching (Code 484).

e. **R_{TREAT}**

i. Dischargers using treatment systems on their ranch or by participating in collective treatment programs or systems may monitor the inflow and outflow nitrate concentration and volume of the treatment systems and quantify and report this as **R_{TREAT}**. Currently, **R_{TREAT}** is not used to determine compliance with Nitrogen Discharge Targets but may be used to evaluate nitrogen management efficiency and will inform prioritization for follow-up action. Dischargers must maintain any data collected and rationale used in determining the amount of nitrogen removed through treatment in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

f. **R_{OTHER}**

i. If Dischargers remove nitrogen from their ranch in ways not quantified above, they may monitor this nitrogen removed and report this as **R_{OTHER}**. Currently, **R_{OTHER}** is not used to determine compliance with Nitrogen Discharge Targets but may be used to evaluate nitrogen management efficiency and will inform prioritization for follow-up action. Dischargers must maintain any data collected and rationale used in determining any other methods of nitrogen removal in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

18. Dischargers must monitor and report information associated with irrigation management in annual INMP Summary reports.

    a. **Crop evapotranspiration.**

        i. Dischargers must calculate and report the evapotranspiration for each specific crop. Acceptable methods include, but are not limited to, using reference evapotranspiration data from a local weather station (e.g., California Irrigation Management Information System (CIMIS)[6] or an on-farm station) with a crop coefficient conversion value, and direct measurement.

    b. **Irrigation discharge to surface water.**

        i. Dischargers must estimate and report the volume of water discharged through surface outflows, including tile drains.

Section C. Groundwater Monitoring and Reporting

This section contains six types of monitoring and reporting related to the evaluation of groundwater and drinking water quality: ***On-Farm Domestic and Dual-Use Wells***, ***Irrigation Wells Prior to Start of Groundwater Quality Trends Monitoring***, and ***Groundwater Quality Trends*** which are required of all Dischargers; ***Verification of INMP Summary Report Data*** and ***Ranch-Level Groundwater Monitoring*** which are required for IDWP Dischargers and optional for demonstrating compliance with the final receiving groundwater limit for all Dischargers; and ***Ranch-Level Root Zone Monitoring*** that must be completed by IDWP Dischargers or when required by the Executive Officer.

General Groundwater Monitoring and Reporting Requirements

1. All groundwater monitoring data sampled to meet the minimum groundwater monitoring requirements of the Order must be submitted electronically to the State Water Board's GeoTracker database by the testing laboratory or an approved third-party program. Submitted data must include the ranch AGL, the well coordinates (latitude and longitude), the well name (i.e., Location Identifier

[6] CIMIS station data can be found online at the California Irrigation Management Information Services, Department of Water Resources website: https://cimis.water.ca.gov/WSNReportCriteria.aspx

(LOCID)/Field Point Name) that is consistently and repeatedly used to refer to the same well each time the well is sampled, and the well type (i.e., Field Point Class; PRIW for Domestic/Private Drinking Water Well or AGIR for Agricultural/Irrigation Well). It is recommended the well name be affixed to the well to eliminate confusion during sample collection and labeling and laboratory reporting.

2. All groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting third-party monitoring) using proper sample collection and handling method, chain-of-custody, and quality assurance/quality control protocols associated with monitoring and reporting.

3. To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

On-Farm Domestic and Dual-Use Wells

4. Monitoring of on-farm[7] domestic wells that are physically located on the ranch, including dual-use wells used for both irrigation and domestic purposes (see Definition in Attachment C), and the reporting requirements described below are necessary to protect public health by identifying on-farm domestic wells that do not meet drinking water standards, providing timely health risk notifications to all well users, and verifying well users have alternative replacement water as may be appropriate.

5. **Beginning in 2022**, all Dischargers, must conduct annual sampling of all on-farm domestic and dual-use wells (see definition in **Attachment C**) between March 1 and May 31. Dischargers must report monitoring results by **July 31 each year**.

6. To ensure the collected samples are representative of the as-produced water from the on-farm domestic or dual-use well, groundwater samples must be collected at or near the well head (before the pressure tank and prior to any well head treatment). If this is not possible, the water sample must 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 devices or systems.

7. At a minimum, samples must be analyzed for nitrate as nitrogen or nitrate + nitrite as nitrogen, 1,2,3-trichloropropane (1,2,3-TCP), and field parameters as specified in **Table MRP-4**.

8. If an on-farm domestic or dual-use well noted on the Discharger's electronic Notice of Intent (eNOI) becomes inactive (i.e., is taken out of service) or is abandoned (i.e., destroyed per local and state well standards), sampling may cease until such time as the domestic supply well is returned to service or a new

[7] On-farm refers to wells that are physically located on the property. Attachment C explains that "on-farm domestic wells" include "dual-use" wells used for both irrigation and domestic supply purposes.

well is installed. The Discharger must keep any records establishing that a well is not being used for domestic purposes.

9. The Discharger must ensure an inactive on-farm domestic or dual-use well is properly maintained as follows and in accordance with local well and drinking water program requirements:

    a. The well or well plumbing is physically disconnected from any water distribution system plumbing serving a residential residence.

    b. The top of the well or well casing must be provided with a cover that is secured by a lock or other means to prevent its removal without the use of equipment or tools. A pump, motor, or other surface feature of an on-farm domestic or dual-use well are considered examples of acceptable on-farm domestic or dual-use well covers.

    c. The cover must be adequate to prevent unauthorized access, a safety hazard to humans and animals, or the entrance of foreign material, pollutants, or contaminants into the well.

    d. The Discharger must update their eNOI within 60 days when an on-farm domestic or dual-use well is taken out of service, returned to service, or replaced by a new well to indicate the accurate number of operating on-farm domestic and dual-use wells on the ranch.

    e. If an on-farm domestic or dual-use well is permanently taken out of service, the Discharger must destroy the well in accordance with California Department of Water Resources (DWR) and local requirements for well destruction (including obtaining well destruction permits).

Notification to On-Farm Domestic and Dual-Use Well Users

10. On an annual basis, Dischargers must provide well users with a summary of laboratory analytical results within **three (3) business days** of receiving results from the laboratory. Dischargers must also provide a summary of the most recent laboratory analytical results to any new well users (e.g., tenants and employees with access to the sampled well) within **three (3) business days** whenever there is a change in the population using the well. Dischargers may use the Drinking Water Notification template on the Central Coast Water Board website for provision of the analytical results summary, or an alternative notification form approved by the Executive Officer.

11. Notification of annual laboratory analytical result summaries to well users must include information regarding health risks associated with the following:

    a. Consuming, boiling, and/or cooking with well water containing nitrate in excess of the Maximum Contaminant Level (MCL:10 mg/L nitrate [or nitrate plus nitrite] as nitrogen).

b. Consuming and/or showering with well water containing 1,2,3-TCP in excess of the MCL (0.005 µg/L).

12. All notification materials must be provided in appropriate languages to sufficiently inform well users.

13. Dischargers must update their electronic Notice of Intent (eNOI) within **30 days** of receiving results from the laboratory to confirm the following:

    a. Well users have been provided with a summary of laboratory analytical results.

    b. Well users have been provided with information regarding health risks associated with well water containing nitrate and/or 1,2,3-TCP in excess of their respective public health drinking water standards (i.e., maximum contaminant levels (MCLs).

    c. Well users have an alternate source of water for domestic purposes if the sampled well contains nitrate and/or 1,2,3-TCP in excess of their respective MCLs.

    d. If there has been a change in the population using the well in the past year (e.g., new tenants or residents), confirm that new well users have been provided with the information and resources described above.

14. Dischargers must keep a record of the notifications that were provided to all existing and new on-farm domestic and dual-use well users. These records must include the addresses where the notifications were provided and the date the notifications were provided, must be maintained in the Farm Plan, and submitted to the Central Coast Water Board upon request.

Irrigation Wells Prior to the Start of Groundwater Quality Trends Monitoring

15. The objectives of sampling on-farm irrigation wells during the period between the effective date of this Order and the initiation of groundwater quality trends monitoring are as follows:

    a. To evaluate groundwater conditions in agricultural areas.

    b. To inform establishment of a groundwater quality trends monitoring network.

16. **Beginning in 2022,** all Dischargers with one or more on-farm irrigation wells (e.g., irrigation wells physically located on the ranch) must conduct annual sampling of the primary irrigation well (see definition in **Attachment C**) **between March 1 and May 31**. Dischargers must report monitoring results by **July 31 each year**. This annual monitoring and reporting requirement will cease upon initiation of an Executive Officer-approved groundwater quality trends monitoring and reporting work plan.

17. At a minimum, samples must be analyzed for nitrate as nitrogen or nitrate + nitrite as nitrogen, total dissolved solids (TDS), and field parameters as specified in **Table MRP-5**.

Groundwater Quality Trends Monitoring

18. The objectives of groundwater quality trends monitoring and reporting are as follows:

    a. To evaluate the status of groundwater quality over time, including whether groundwater quality objectives are attained, and beneficial uses are protected.

    b. To quantitatively evaluate the impact of irrigated agricultural waste discharges to groundwater.

    c. To evaluate short-term patterns and long-term trends (five to ten years or more) in groundwater quality.

19. Dischargers have the option to conduct groundwater quality trends monitoring and reporting, either individually or as part of a third-party effort that is approved by the Executive Officer.

Third Party Approach

20. Dischargers who elect to perform groundwater quality trends monitoring and reporting as part of a **third-party** effort must form or join a third-party. The third-party must submit a work plan for Executive Officer review by the dates and covering the groundwater phase area[8] by the dates specified below or by an alternative schedule approved by the Executive Officer. The work plan must be prepared by a qualified professional and designed to quantitatively evaluate groundwater quality trends and quantitatively assess the impacts of agricultural discharges on groundwater quality over time. The work plan must be approved by the Executive Officer prior to implementation. Once approved by the Executive Officer, the work plan must be implemented. The work plan must include Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) (see **Section H**). The work plan must explicitly describe how the ranch-level groundwater quality trends monitoring program will explicitly evaluate groundwater quality trends over time and assess the impacts of agricultural discharges on groundwater quality.

    a. **September 1, 2023** for groundwater basins within Groundwater Phase 1 areas;

[8] Examples of acceptable scales covered by "regional" work plans could be at the groundwater basin or subbasin scale, the entire central coast region, or an area smaller than a groundwater subbasin with specific hydrogeologic conditions, such as recharge or discharge areas.

b. **September 1, 2025** for groundwater basins within Groundwater Phase 2 areas;

c. **September 1, 2027** for all other areas.

21. At a minimum, the work plan must include the following:

    a. Description of the geographic and hydrogeologic area(s) in which the groundwater quality trends monitoring program will be established, including identification of groundwater basins and subbasins, recharge and discharge areas, as well as supporting data and maps.

    b. Rationale for a sufficiently representative monitoring well network and sampling schedule to monitor discrete depth intervals with an emphasis on shallow or first encountered groundwater, including supporting soils, geologic, and hydrogeologic information such as cross-sections and groundwater depth and flow characteristics.

    c. Proposal for obtaining well completion reports and/or well driller's logs and maintain such data.

    d. Location and construction details associated with proposed wells composing the monitoring network, including existing and new wells.

    e. If applicable, a description of how data from existing monitoring networks will be incorporated into the groundwater quality trends monitoring program and how those data will be uploaded to GeoTracker.

    f. Table showing proposed monitoring parameters that will be evaluated to assess water quality changes over time. At a minimum, groundwater quality trends monitoring wells must be sampled for monitoring parameters included in **Table MRP-6.**

    g. Proposed protocol used to evaluate trends in groundwater quality data, including statistical methods and data depiction.

    h. Proposed reporting schedule for water quality data (all required parameters in Table MRP 6) and trends analysis.

22. If one or more wells from an ongoing, established non-agricultural monitoring program are incorporated into the groundwater quality trends monitoring network, monitoring data from these wells must also be uploaded to the GeoTracker database and must comply with GeoTracker EDF and EDD criteria and protocols. Incorporation of such data must occur as described in the work plan approved by the Executive Officer.

Individual Approach

23. Dischargers who elect to perform groundwater quality trends monitoring and reporting **individually** must submit an individual groundwater quality trends monitoring work plan to the Executive Officer for approval prior to

implementation. The work plan must be approved by the Executive Office prior to implementation. The work plan must explicitly describe how the ranch-level groundwater quality trends monitoring program will evaluate groundwater quality trends over time and assess the impacts of agricultural discharges on groundwater quality. The work plan must include a SAP and QAPP (see **Section H**). Dischargers must submit the work plan by the following dates:

a. **September 1, 2023** for ranches groundwater basins with Groundwater Phase 1 areas;

b. **September 1, 2025** for ranches groundwater basins with Groundwater Phase 2 areas;

c. **September 1, 2027** for ranches in all other areas.

24. At a minimum, the work plan must include the following:

    a. Identification and description of wells used for groundwater quality trends monitoring (in narrative form and in map view) with supporting technical rationale justifying the effectiveness of the well(s) in assessing ranch level groundwater quality trends over time.[9]

    b. Identification of the water-bearing zone monitored by each well used for groundwater quality trends monitoring.

    c. Proposed location(s) and well construction characteristics for any proposed new purpose-built monitoring wells to be used in groundwater quality trends monitoring if existing wells are not adequate for long-term monitoring.

    d. Determination of the statistical method that will be used for groundwater quality trends evaluation.

25. The monitoring and reporting schedule and minimum list of testing parameters is shown in **Table MRP-7.**[10]

26. Dischargers must monitor wells used in groundwater quality trends monitoring on a semi-annual basis during the **first and third quarters of each calendar year**. Monitoring data must be reported to GeoTracker **by May 31 for sampling**

[9] Acceptable justification for well inclusion in individual trends monitoring is well construction information typically included on well driller logs, also known as well completion reports. Dischargers are encouraged to locate all such well completion reports and submit the reports to the GeoTracker database as a Bore Log File (i.e., GEO_BORE) in pdf format. DWR is a repository for well completion reports, and Dischargers are encouraged to contact DWR or local well permitting authority to obtain these reports as necessary.

[10] To the extent practicable, the depth to groundwater (in feet below ground surface) must also be measured and reported for wells used in individual groundwater trend determination. Measurements must be made from the same location at the top of the well that is accessible ("x"), and the height of that measuring location above the ground surface must also be measured ("y") for an accurate depth to water calculation (i.e., x – y = depth to groundwater below the ground surface).

occurring in the first quarter and **by November 30 for sampling occurring in the third quarter**.

27. Dischargers must submit a groundwater quality trends evaluation report by January 31 each year. The groundwater quality trends evaluation report must be provided in a format specified by the Executive Officer.

28. At a minimum, the groundwater quality trends evaluation report must include the following:

    a. For each well used in groundwater quality trends monitoring, plots of concentration versus time for each monitoring parameter, except for field parameters pH, temperature, and specific conductance. The groundwater quality trends plots must reflect concentrations detected during each sampling event and are expected to expand over time.

    b. Discussion of groundwater quality trends represented in the trend plots (i.e., increasing or decreasing groundwater quality trends, implications associated with farm management practices, etc.).

29. Dischargers who do not have a well on their property and do not choose to join a third-party program must still perform groundwater quality trends monitoring and reporting in accordance with **Table MRP-7**. Dischargers who do not have a well on their property may choose one of the following options for groundwater quality trends monitoring and reporting:

    a. Install a monitoring well or wells as needed to sufficiently characterize groundwater quality trends.

    b. Develop a coordinated groundwater quality trends monitoring and reporting program by partnering with adjacent property owner(s) with wells to sufficiently characterize groundwater quality trends.

    c. Obtain authorization from adjacent property owners with one or more wells to collect water quality samples from their well or wells or from individual property owners or a third-party groundwater quality trends monitoring and reporting program to utilize their water quality data.[11]

30. Dischargers who obtain authorization from individual property owners (including adjacent property owners) or a third-party program for use of water quality data must document in the annual groundwater quality trends evaluation report how data obtained from wells not on the Discharger's property are representative of groundwater conditions at the Discharger's property.

[11] The conditions of "authorization" will be up to the negotiating parties, and documentation of the authorization will be a condition of the individual trends monitoring program work plan approval process.

Reporting to Demonstrate Compliance with the Final Receiving Groundwater Limit

31. All Dischargers, regardless of the compliance pathway chosen, must achieve and demonstrate compliance with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9** by the final compliance deadline for either IDWP or AWSP Dischargers. Dischargers have the option of demonstrating compliance with the final receiving groundwater limit via:

    a. Method 1: verified INMP Summary report data,

    b. Method 2: ranch-level groundwater monitoring, or

    c. Other Methods: another quantifiable and scientifically robust method approved by the Executive Officer, as described in **Order, Part 2, Section C, paragraph 10**. To be considered for Executive Officer approval, Dischargers must submit a technical report describing the proposed methods of compliance.

32. Monitoring and reporting requirements for demonstrating compliance via verified INMP Summary report data or ranch-level groundwater monitoring are described in **Section C**.

33. Dischargers must continue annual monitoring and reporting to demonstrate ongoing compliance, even after the compliance deadline, by one of the methods defined in the **Order, Part 2, Section C, paragraph 10**.

Verified INMP Summary Report Data

34. INMP Summary – Annual Verification Reports (AVR) may be used by Dischargers to demonstrate compliance with the final receiving groundwater limit by the final compliance deadlines in either **Order, Part 2, Section D.1** or **Order, Part 2, Section D.2**, depending on the compliance pathways chosen by the Discharger.

35. IDWP Dischargers must submit annual INMP Summary – AVR unless they demonstrate compliance with the final receiving groundwater limit using Ranch-Level Groundwater Monitoring Report(s) see **Section D.1**).

36. The INMP Summary – AVR must include the following:

    a. A statement signed by a qualified professional in accordance with **Order, Part 2, Section C, paragraph 8** certifying that the data reported in the INMP Summary report has been audited by the qualified professional and the supporting documentation in the INMP is true, accurate, and complete and submitted in accordance with **Order Part 2, Section B, paragraphs 1-4**.

    b. A description of the process used to review and verify the documentation supporting total nitrogen **A** and **R** values reported in the INMP Summary

report. This description must explain how the reviewer evaluated the records used to calculate **A** and **R**. Supporting audit documentation must include, but is not limited to:

i. Nitrogen Application Records

1. Fertilizer purchase invoices (conventional and organic)
2. Compost application records and nutrient analysis reports
3. Irrigation events, volumes, and concentrations for nitrogen applied via irrigation water (A_{IRR})

ii. Harvest and Removal Records

1. Crop harvest records
2. Documentation of crop-specific nitrogen conversion coefficients
3. Methodology used for calculating nitrogen removed

iii. Calculations for the following:

1. Nitrogen applied via irrigation water
2. Nitrogen applied (A)
3. Nitrogen removed (R)

iv. Field-Level and Operational Data

1. Maps and acreage data to confirm alignment with reported values

c. Identify any aspects of nitrogen application, nitrogen removal, calculations, and/or field-level and operation data that could not be verified and describe the reason(s) that verification(s) could not occur.

d. Provide recommendation(s) that will improve Discharger recordkeeping that will aid in verifying information in subsequent years.

INMP Reporting Due Date for Demonstrating Compliance with Final Receiving Groundwater Limits

37. **By March 1 of each year following the compliance deadline,** Dischargers must submit an INMP Summary – AVR to the Executive Officer, if demonstrating compliance with final receiving groundwater limit using verified INMP Summary report data, as described in **Order, Part 2, Section C, paragraph 10**. The INMP Summary – AVR must describe how the verified data demonstrates compliance with **Order, Part 2, Section C, paragraph 9.**

Ranch-Level Groundwater Quality Monitoring

38. Individual ranch-level groundwater quality monitoring and reporting may be used by any Discharger to demonstrate compliance with the final receiving groundwater limit by the final compliance deadlines in either **Order, Part 2, Section D.1** or **Order, Part 2, Section D.2**, depending on the compliance pathways chosen by the Discharger.

39. IDWP Dischargers must conduct annual individual ranch-level groundwater quality monitoring and reporting unless they demonstrate compliance with the final receiving groundwater limit using INMP Summary – AVR.

40. For IDWP Dischargers, ranch-level groundwater quality monitoring is used to demonstrate: 1) progress towards compliance with the final receiving groundwater limit in **Order Part 2, section C, paragraph 9**.

41. Ranch-level groundwater monitoring and reporting must be conducted by a qualified professional.

42. Monitoring and reporting efforts, including planning, must be explicitly designed and implemented to achieve the following objectives:

    a. Assess and quantify the Discharger's contribution to exceedance of the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9** in first encountered groundwater underlying a Discharger's ranch.

    b. Assess the timeframe over which discharge impacts first-encountered groundwater quality and account for unsaturated zone travel time when evaluating a Discharger's impact to first-encountered groundwater quality. Nitrogen application will not be reflected in the aquifer water quality response until the applied nitrogen has migrated through the unsaturated zone.

    c. Assess management practice effectiveness to identify management practices that can be implemented on the ranch to control or eliminate discharges that cause or contribute to an exceedance of the MCL for nitrate in first-encountered groundwater.

    d. Demonstrate progress toward and compliance with applicable water quality objectives, nitrogen discharge targets, and the final receiving groundwater limit.

    e. Collect spatially and temporally representative information on the impact of the discharge on first-encountered groundwater quality.

Ranch-Level Groundwater Monitoring Work Plan Requirements

43. **Within 120 days** of electing to participate in the IDWP compliance pathway or otherwise electing to conduct ranch-level groundwater quality monitoring to demonstrate compliance, Dischargers must submit a ranch-level groundwater quality monitoring work plan to the Executive Officer for approval that demonstrates how the Discharger intends to implement ranch-level groundwater monitoring. The ranch-level groundwater quality monitoring work plan must be approved by the Executive Officer prior to implementation. The work plan must be in a format specified by the Executive Officer, must include a SAP and QAPP (see **Section H**), and describe how the ranch-level groundwater quality monitoring will achieve the objectives in paragraph 42. The following elements are required for complete work plans:

a. A hydrogeologic conceptual site model that characterizes the physical setting and hydrogeologic conditions of the ranch. At a minimum, the conceptual model should:

    i. Describe the geologic framework, stratigraphy, and water-bearing units relevant to groundwater flow beneath the ranch.

    ii. Identify sources of recharge and discharge, including irrigation, precipitation, and groundwater pumping.

    iii. Depict anticipated groundwater flow directions and gradients.

    iv. Provide sufficient detail to support the design of the monitoring well network and interpretation of first-encountered groundwater quality data.

b. An approach for developing a well network that can determine groundwater gradient, groundwater flow velocity and direction beneath a Discharger's ranch and evaluate groundwater quality that may be influenced by the nitrogen discharge at the ranch.

    i. The well network should be capable of monitoring first-encountered groundwater. The wells must be located within the boundaries of the enrolled ranch assessor parcel numbers (APNs) and land that is farmed on those APNs. The number and location of the proposed groundwater monitoring wells in the network must be sufficient for determining potential impacts and be sufficiently representative of groundwater conditions upgradient and downgradient of the ranch. The location and number of groundwater monitoring wells must be justified using an objective, quantifiable, and reproducible approach.

    ii. The well network can be comprised of existing wells that meet these criteria or proposed new monitoring wells for installation. New groundwater monitoring wells should not be installed prior to Executive Officer approval of the groundwater monitoring work plan and preliminary hydrogeologic conceptual site model.

c. Justification that demonstrates the wells, either existing or new, are screened in the correct vertical horizon. Monitoring wells should be screened in the uppermost portion of first-encountered groundwater (i.e., the shallowest saturated interval). Well screens must be of a length that is sufficient to remain at least partially saturated under seasonal groundwater fluctuations while remaining short enough to characterize the water quality of the uppermost saturated zone without mixing with deeper groundwater. Screen placement must be supported by lithologic logs, water-level measurements, and site-specific hydrogeologic interpretation.

d. Acknowledgement that any new wells will be installed in accordance with California Department of Water Resources Bulletin 74-81 and Supplement 74-90, California Water Code sections 13710 through 13755, and all local permitting requirements.

e. A timeline for surveying well elevations. The locations and top-of-casing elevations for existing and the newly installed monitoring wells should be surveyed by a licensed land surveyor.

f. A plan for sampling and analyzing all wells in the monitoring network as specified in **Table MRP-8** and the Executive Officer approved SAP and QAPP and reporting the data.

g. A protocol for measuring depth to groundwater prior to sampling and calculating groundwater elevations, groundwater gradient, and groundwater gradient direction.[12]

h. An approach for purging the well prior to sampling consistent with footnotes 3 and 5 in **Table MRP-8**.

i. A protocol that indicates once the groundwater level in each of the wells has recovered sufficiently to ensure the collection of representative groundwater samples, samples will be collected by a qualified third party (e.g., consultant, technician, person conducting third-party monitoring) using proper sample collection and handling methods, chain-of-custody, and quality assurance/quality control protocols, and approved USEPA methods.

44. **Within 120 days** of receiving Executive Officer approval of the work plan, Dischargers must implement the work plan.

Ranch-Level Groundwater Monitoring Report Requirements

45. Dischargers must report ranch-level groundwater monitoring data and information in an annual Ranch-Level Groundwater Monitoring Report (GMR). The due dates for annual Ranch-Level GMRs will depend on whether the reporting is to demonstrate compliance with IDWP compliance pathway monitoring and reporting requirements or to demonstrate compliance by the final compliance deadline for all Dischargers.

46. The annual Ranch-Level GMR and associated data must be uploaded to GeoTracker in accordance with **Table MRP-9,** unless the Executive Officer requires a different format. Each annual Ranch-Level GMR must contain, at a minimum, the information listed in **Table MRP-8** and the items listed below, unless approved otherwise by the Executive Officer:

[12] The locations and top-of-casing elevations for the existing groundwater monitoring wells must be surveyed by a licensed land surveyor if not already completed at the time of installation.

a. The Discharger's ranch name and AGL number, project contact, and report date.

b. Scaled Map(s) depicting the site and the locations of monitoring wells, groundwater elevations, calculated potentiometric elevations at each monitoring well and interpreted potentiometric surface for the shallow water-bearing zone, and groundwater quality sampling results.

c. Plots depicting groundwater quality through time in each of the monitoring wells.

d. A description of the best practicable treatment and control (BPTC) or management practices implemented and assessed in the previous year to reduce nitrogen discharge.

e. A narrative evaluation and interpretation of the groundwater quality data and the impact of the discharge on groundwater quality. This interpretation must evaluate compliance with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9.**

f. In table format, all monitoring data and information obtained over time, including field-measured and laboratory analytical results (including analytical methods, reporting limits, and all quality control data).[13]

g. Calculations of pollutant loading, including equations used in the calculation.

h. Copies of monitoring well field sheets and report field data measurements, as described in **Table MRP-8**.

i. Photographs of monitoring wells, including labels indicating photograph location and date.[14]

j. A table that includes well completion information for all monitoring wells, including top of well casing elevation, total depth, and screened intervals with respect to ground surface and NAVD88. Well completion reporting to GeoTracker only needs to be completed once.

Ranch-Level Groundwater Monitoring and Reporting Due Date and Requirements for Demonstrating Compliance

47. **By March 1 of each year following the compliance deadline,** Dischargers must submit the following information to the Executive Officer in a format specified by the Executive Officer if demonstrating compliance by the compliance deadline using ranch-level groundwater monitoring data.

[13] Chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff upon request.

[14] Photographs must be taken from the same location and vantage point for each subsequent annual report.

a. A Ranch-Level GMR that interprets the ranch-level groundwater monitoring data in the context of demonstrating compliance with the final receiving groundwater limit, as described in **Order, Part 2, Section C, paragraph 9.** The report must include the results of at least three years of semiannual ranch-level groundwater monitoring (i.e., at least 6 monitoring events from each of the wells in the approved monitoring network). The monitoring conducted must be based on an Executive Officer approved ranch-level groundwater monitoring and reporting work plan.

Ranch-Level Root Zone Monitoring

48. **Executive Officer Mandated Root Zone Monitoring**: Based on groundwater quality data showing repeated exceedances of water quality objectives, the Executive Officer may require Dischargers to conduct ranch-level root zone monitoring or the equivalent thereof.[15]

    a. **Within 120 days**[16] of being required by the Executive Officer to conduct ranch-level root zone monitoring**,** Dischargers must submit a complete work plan to the Executive Officer for approval prior to implementation. The work plan must be in a format specified by the Executive Officer.

    b. Within **90 days** of Executive Officer approval of the work plan, the Discharger must implement the work plan.

49. **Root Zone Monitoring for IDWP Dischargers:** IDWP Dischargers must conduct annual ranch-level root zone monitoring and reporting to demonstrate effective nitrogen discharge management through time (e.g., minimizing nitrate concentrations beneath the root zone). This monitoring and reporting is required until the IDWP Discharger has demonstrated compliance with the final receiving groundwater limit in **Order Part 2, section C, paragraph 9**. Dues dates for ranch-level root zone monitoring work plans and reports for IDWP Dischargers are in **Section D.1**.

50. Ranch-level root zone monitoring and reporting efforts, or the equivalent thereof, must be explicitly designed and implemented to achieve the following objectives:

    a. Assess and quantify the concentration of nitrogen below the root zone.

    b. Assess the timeframe over which discharge below the root zone occurs.

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[15] Dischargers that are members in good standing with the third-party alternative compliance pathway for groundwater protection (and therefore are also complying with this Order via the AWSP compliance pathway) are exempt from requirements to conduct ranch-level root zone monitoring and reporting.

[16] Central Coast Water Board staff will inform the Discharger and/or the third party representing the Discharger **90** days before the Executive Officer intends to require ranch-level discharge monitoring. The purpose of this advance notice is to provide flexibility to Dischargers in the event that circumstances beyond their control have adversely impacted the ability to achieve nitrogen discharge targets by prescribed timeframes.

c. Assess the effectiveness of current management practices to identify improvements that will better control and reduce discharges below the root zone.

d. Provide information on the effect of the water budget, including irrigation, precipitation, and evapotranspiration amount and timing on nitrogen leaching past the root zone.

e. Collect spatially and temporally representative information on the concentration of nitrogen discharging beneath the root zone during the calendar year.

Ranch-Level Root Zone Monitoring Work Plan Requirements

51. A work plan for ranch-level root zone monitoring, or the equivalent thereof, must be able to achieve the objectives with paragraph 50. The following elements are required for complete work plans:

    a. Description of how the work plan will achieve the objectives in **Section C, paragraph 50**.

    b. Schedule for work plan implementation.

    c. Description of monitoring locations, depths, methodologies, frequencies and analytical methods to measure the concentration of nitrate and other relevant parameters in discharge water (i.e., percolation below the root zone).

    d. Map showing monitoring locations on the ranch.

    e. Description of monitoring methodologies and frequencies that will be implemented to measure the concentration of nitrogen that percolates below the root zone for each crop on the ranch (e.g., the root zone monitoring protocol in **Appendix 1** or a functionally equivalent methodology).

    f. Description of how ranch-level root-zone monitoring data will be used to evaluate the timeframe over which discharge below the root zone occurs and assess and improve management practices.

    g. Description of how information acquired from ranch-level root zone monitoring will be used to adjust nutrient management on the ranch and reduce nitrogen discharges below the root zone.

    h. Description of how all of the elements of the root zone monitoring protocol in **Appendix 1** will be implemented and describe any deviations from the protocol with justification for the deviations. If a functionally equivalent approach for root zone monitoring is implemented, describe the approach in detail.

Ranch-Level Root Zone Monitoring Report Requirements

52. By March 1 of the year following a requirement to conduct ranch-level root-zone monitoring, and by March 1 each year thereafter, Dischargers must report ranch-level root zone monitoring data and information in Ranch-Level Root Zone Monitoring Reports, in a format specified by the Executive Officer. The annual Ranch-Level Root Zone Monitoring Report, containing the associated data must be uploaded to GeoTracker, in accordance with **Section D** and **Table MRP-9**, unless the Executive Officer requires a different format. Reported data and information must contain the items listed below, unless approved otherwise by the Executive Officer:

    a. The ranch name and Global ID number, site/test plot name(s), project contact, report date, and monitoring location coordinates in decimal degrees with precision of 0.00001 degrees.

    b. Map(s) depicting the location of monitoring sites/test plots.

    c. In a format specified by the Executive Officer, all monitoring data and information obtained over time, including field-measured and laboratory analytical results. Laboratory data reports and chain of custody forms must be included as attachments.[17]

    d. Description of the crops grown in the monitoring area and detailed information on the amount, timing, and method of nitrogen application to those crops.

    e. Calculations of pollutant loading, including equations used in the calculation.

    f. A narrative interpretation of the discharge monitoring data and the Discharger's potential impact on groundwater quality.

    g. A narrative interpretation of nitrogen discharge beneath the root zone in the context of the water budget, including irrigation, precipitation, and evapotranspiration timing and volume.

    h. A summary of the effectiveness of BPTCs and/or management practices and recommendation for improving these to minimize nitrogen below the root zone and available to discharge into groundwater.

    i. Photographs of monitoring sites/test plots, including labels indicating photograph location and date.[18]

[17] Chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff upon request.

[18] Photographs must be taken from the same location and vantage point for each subsequent annual report.

Section D. Requirements for IDWP and AWSP Compliance Pathways

This section contains monitoring and reporting requirements associated with IDWP and AWSP compliance pathways in **Order Part 2, Section D.**

D.1. IDWP Compliance Pathway Monitoring and Reporting

1. Monitoring and reporting requirements for IDWP Dischargers depend on whether the Discharger has demonstrated compliance with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9.**

    a. Prior to demonstrating compliance, all the monitoring and reporting requirements described below apply.

    b. Once compliance has been demonstrated, the Discharger must perform only the monitoring and reporting required to continue to demonstrate compliance, either verified INMP Summary report data reporting or ranch-level groundwater quality monitoring and reporting, as described in **Order, Part 2, Section C, paragraph 9,** unless paragraph 2 applies.

    c. All other monitoring and reporting required by the MRP outside of the IDWP compliance pathway still applies regardless of whether the Discharger has demonstrated compliance with the final receiving groundwater limit.

2. If an IDWP Discharger is out of compliance with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9,** after previously demonstrating compliance, they must follow the monitoring and reporting requirements set forth below in this **Section D.1, paragraph 3**.

3. Unless and until IDWP Dischargers demonstrate compliance with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9**, IDWP Dischargers are subject to the following monitoring and reporting requirements:

    a. **Farm Plan INMP Certification: Within 120 days** of enrolling in the IDWP compliance pathway, and **annually thereafter by March 1**, submit a certified INMP section of the Farm Plan that contains the information required in **Order, Part 2, Section B, paragraphs 1-4** and in **Section B,** as well as the following additional information:

        i. A plan to decrease nitrogen discharge such that the Discharger can comply with the final receiving groundwater limit in **Order, Part 2, Section C, paragraph 9** by the final compliance deadline.

        ii. A description of specific BPTC or other management practices that will be implemented to reduce nitrogen discharge and achieve a three-year mean nitrogen discharge in accordance with the targets and schedules in **Order Part 2, Section D.1, Table D.1-1**.

        iii. A description of specific BPTC or management practices to be implemented in the next reporting year, any barriers to complying

with discharge requirements by the final compliance deadline, and strategies and management practices that will ensure compliance with the final receiving groundwater limit by the final compliance deadline.

iv. If the nitrogen discharge target(s) has not been achieved by the corresponding target schedule (as defined in **Order Part 2, Section D.1, Table D.1-1**), the certified INMP section of the Farm Plan must include a plan for immediately reducing nitrogen discharge to achieve the nitrogen discharge target according to the compliance date for IDWP Dischargers.

b. **Root Zone Monitoring:** Conduct ranch-level root zone monitoring and reporting, or the equivalent thereto. Ranch-level root zone monitoring and reporting must comply with the following requirements:

i. **Within 120 days** of enrollment in the IDWP compliance pathway, submit a ranch-level root zone monitoring work plan. The work plan must comply with the ranch-level root zone monitoring requirements in **Section C** and must be consistent with the root zone monitoring protocol requirements for IDWP Dischargers in **Appendix 1**, or a functionally equivalent approach.

ii. **Within 120 days** of receiving Executive Officer approval of the work plan, Dischargers must implement the work plan.

c. **Ranch-Level Groundwater Quality Monitoring:** Conduct individual ranch-level groundwater monitoring. Ranch-level groundwater quality monitoring and reporting must comply with the following requirements:

i. **Within 120 days** of enrollment in the IDWP compliance pathway, submit a ranch-level groundwater quality monitoring work plan consistent with the requirements for ranch-level groundwater quality monitoring in this **Section C**.

ii. **Within 120 days** of receiving Executive Officer approval of the work plan, Dischargers must implement the work plan.

iii. **Within 180 days** of enrollment in the IDWP compliance pathway, IDWP Dischargers must provide well construction information for all on-farm domestic wells, dual-use wells, and irrigation supply wells located on an IDWP compliance pathway Discharger's enrolled ranch APNs and land that is farmed on those APNs. IDWP Dischargers must report well construction information within 60-days of installing any new well on their ranch. Well construction information must be uploaded to GeoTracker in accordance with **Table MRP-9**. Well completion reports must be included in reporting. The following information must also be included in Ranch-Level GMRs:

1. Top-of-casing elevation and well completion depth,
2. depth of the top and bottom of the annular or sanitary seal,
3. screened interval depths,
4. well construction date,
5. maximum pumping rate, and
6. number of households or other domestic use connections served (drinking water supply wells only).

d. **Drinking Water Well Sampling:** Sample all on-farm domestic and dual-use wells a second time each year for nitrate, in addition to, and in accordance with, the sampling required in **Section C**. Monitoring for 1,2,3-TCP is not required in the second annual sampling.

   i. The second round of sampling must occur between **September 1 and November 30**.

   ii. Results of this monitoring must be uploaded to GeoTracker by an ELAP-certified laboratory or an approved third-party program administrator by **January 31 of the year following sampling**.

e. **Annual Reporting:** Annual reports must be submitted by **March 1** of the year following enrollment in the IDWP compliance pathway, and by **March 1 every year** thereafter. Ranch-Level Root Zone Monitoring and Ranch-Level Groundwater Monitoring annual reports are not due until after the approval of the corresponding work plans. Annual reporting must include the following:

   i. Certified INMP section of the Farm Plan,

   ii. INMP Summary – AVR,

   iii. Ranch-Level Root Zone Monitoring Report,

   iv. Ranch-Level GMR,

   v. Well sampling results for all domestic, dual-use, and irrigation wells, and

   vi. Well construction information for all wells on the Discharger's enrolled ranch APNs and land that is farmed on those APNs.

Electronic GeoTracker Submittal for IDWP Dischargers

4. All work plans, annual reports, and data must be provided electronically to GeoTracker in a searchable PDF format, unless the Executive Officer specifies an alternative format.

D.2. AWSP Compliance Pathway Monitoring and Reporting

5. An approved AWSP administrator may fulfill monitoring and reporting requirements on behalf of AWSP Dischargers. Because the AWSP administrator

is not an enrollee under this Order, participation in the AWSP does not transfer, diminish, or delegate any regulatory responsibility. AWSP Dischargers are fully responsible for compliance with monitoring and reporting requirements, regardless of the performance of the AWSP administrator.

6. All AWSP compliance pathway monitoring and reporting must be in a format specified by the Executive Officer and must be compliant with web accessibility requirements set forth by the American with Disabilities Act.

Recurring Reporting Requirements

This section contains **recurring** monitoring and reporting requirements associated with the development and implementation of the AWSP outlined in **Order, Part 2, Section D.2.**

7. **Annual Reports:** AWSP pathway Dischargers or AWSP administrators, on behalf of participating Dischargers, must submit annual reports by **March 1** of the year following approval of the AWSP administrator by the Executive Officer, and by **March 1** every year thereafter. AWSP Program Administration Annual Reports must include, but are not limited to:

    a. **Water Quality Summary:** Summary of on- and off-farm water quality testing, outreach, and results from the previous year, including the number of domestic wells or water systems that have requested testing but not received it and the number of residents or landowners that have refused testing.

    b. **Residents Served:** Report the estimated number of persons served and the location of persons served. Location must be reported using the Census Designated Place (CDP) if one exists; where no CDP exists, the AWSP administrator must report the Census Tract. If neither a CDP nor a Census Tract meaningfully describes the service location (e.g., very rural areas), the AWSP administrator may instead report the location using the public land survey system (PLSS) section. Regardless of the approach used for reporting locations of people served, a map must be provided showing the PLSS section(s) in which interim AWS recipients are located. Individual addresses are not required.

    c. **Services Offered:** Report the number of interim AWS offers made, accepted, and refused, and the reason for refusal, if applicable.

    d. **AWS Demand:** Information concerning the estimated number of residents eligible for AWS but not receiving them, if applicable. If residents are on a waiting list for AWS, provide information regarding the typical wait time and justification for wait time.

    e. **Types of AWS:** Information on the type (e.g., bottled water, point of use or point of entry systems, or other means of providing AWS) and number of each type of interim AWS provided, including but not limited to:

i. The type and number of AWS implemented in the previous calendar year (Jan 1 to Dec 31) and since program inception, categorized by county and groundwater basin,

ii. The type and number of AWS anticipated implementation in the next calendar year (Jan 1 to Dec 31),

iii. The type and number of AWS planned for implementation in the next 1 to 5 years,

iv. The type and number of treatment systems where O&M is being provided.

f. **Planning and Prioritization Status Updates:** Provide a status report regarding the development of long-term drinking water solution prioritization and planning for domestic wells, dual-use wells, state small water systems, and public water systems including actions taken in advance of the required planning and prioritization milestones defined in **Order, Part 2, Section D.2**. Include any reports or other associated documentation developed in the planning process as attachments.

g. **Program Funding:** A detailed description of the AWSP enrollee fee structure including the amount of fees paid by AWSP Dischargers to the AWSP administrator, amount and sources of co-funding acquired or being applied for, other existing program(s) or services leveraged, and cost savings due to co-funding or services leveraged.

h. **Program Cost:** Comprehensive information on the cost of administering the AWSP over the previous year, including but not limited to:

i. The cost of water quality sampling,

ii. The cost of interim AWS provided, including operations and maintenance (O&M),

iii. The cost of planning and prioritization of long-term drinking water solutions,

iv. The cost of outreach and engagement activities conducted,

v. Administrative costs associated with running the program,

vi. Any other expenses encumbered in administering the AWSP.

i. **Outreach and Engagement Summary:** Information on public outreach and engagement including a description of activities that occurred in the previous 12 months and planned for the next 12 months, an evaluation of outreach and engagement efficacy relative to the need, and a comparison of activities conducted to those proposed in the public outreach work plan (paragraph 9). Report on the specific actions conducted to engage with

the local communities and to leverage existing community-based networks.

j. **Financial Forecast for Interim Solutions:** A funding forecast comparing anticipated funding needs over the next calendar year (Jan 1 to Dec 31) and for five years with projected accruals under current fees and co-funding, consistent with the interim AWS funding and implementation work plan (see below).

k. **Milestone Tracking:** A comparison of progress and achievements relative to each of the milestones in **Order, Part 2, Section D.2**.

8. **Board Updates: By August 31** of the year following AWSP administrator approval by the Executive Officer, **and by August 31 every year thereafter,** AWSP pathway Dischargers or AWSP administrators, on behalf of the Dischargers, must present, at a regular meeting of the Central Coast Water Board, the results of previous year's AWSP implementation and discuss all reports that were required to be submitted in the year as well as a summary of the AWSP's progress and achievements relative to each of the milestones required in the **Order, Part 2, Section D.2**.

9. **Public Outreach Work Plan: By the 24th month** after approval of an AWSP administrator by the Executive Officer, and then **every two years thereafter by March 1,** AWSP pathway Dischargers must submit a public outreach work plan detailing how the AWSP will notify and engage potentially eligible residents who may benefit from the AWSP. The plan is subject to Executive Officer approval and must be made available for public comment for a minimum of thirty (30) days prior to approval. The public outreach work plan must include the following elements:

i. **Public Awareness:** Describe how the AWSP will notify impacted residents about the availability of water quality testing and interim AWS and long-term drinking water solutions.

ii. **Public Engagement:** Describe how the AWSP will engage impacted residents in decision-making related to the development and implementation of interim AWS and long-term drinking water solutions.

iii. **Target Audience Identification:** Describe how the AWSP will identify and prioritize outreach to impacted residents most at risk.

iv. **Language Accessibility:** Describe how the outreach and engagement efforts will address language barriers and will provide information in the languages spoken by impacted residents and using the most accessible format (e.g., radio, churches, social media, community leaders, and community health workers [e.g., promotoras]).

v. **Outreach Methods and Channels:** Identify the specific outreach methods used (e.g., radio, door-to-door canvassing, mailers, social media,

community meetings, partnerships with trusted local organizations or community-based groups).

vi. **Engagement Metrics and Evaluation:** Establish measurable goals (e.g., number of households reached, number of impacted residents enrolled in AWS, etc.).

vii. **Documentation and Transparency:** A summary of progress to date on engagement and outreach efforts, successes and lessons learned, and an evaluation of the effectiveness of outreach strategies. Include key performance indicators such as amount of outreach performed, the conversion rate (i.e., number of residents receiving AWS relative to the amount of outreach performed), and other quantifiable measures as appropriate.

viii. **Feedback Mechanisms**: An approach for collecting eligible resident feedback on preferred AWS and outreach and engagement effectiveness and a plan for adjusting outreach strategies based on the success of previous efforts and feedback from residents. Provide a summary of resident feedback.

ix. **Coordination with Other Programs**: A plan for coordinating outreach efforts with other state or local programs (e.g., Safe and Affordable Funding for Equity and Resilience [SAFER] funded programs, Groundwater Sustainability Agencies, Community based groups, other organizations implementing AWS programs, etc.).

x. **Community Outreach Meetings:** A strategy and proposed schedule for hosting community outreach meetings, open to all interested persons. The meetings will provide information regarding the AWSP including how to receive water quality testing and interim AWS and serve as a forum to collect feedback from impacted residents regarding implementation of the program. The work plan must outline an approach for hosting physical outreach meetings and include a virtual attendance option (i.e., hybrid), at least three meeting locations for the first year in areas with a high concentration of impacted residents. The frequency of subsequent meetings must be described in the public outreach work plan.

xi. **Digital and Physical Accessibility**: A plan for ensuring that online materials be accessible (e.g., mobile phone-friendly and compliant with the Americans with Disabilities Act) and that digital outreach is supplemented with in-person efforts for those without internet access.

10. **GeoTracker Reporting:** All water quality sampling results must be uploaded to GeoTracker by an ELAP-certified laboratory or an approved third-party program administrator.

One-Time Reporting Requirements

This section contains **one-time** monitoring and reporting requirements associated with the development and implementation of the third-party AWSP outlined in **Order, Part 2, Section D.2**.

11. **Water Quality Sampling Work Plan: By the sixth month** after approval of an AWSP administrator by the Executive Officer, AWSP Dischargers or AWSP administrators, on behalf of AWSP Dischargers, must submit a plan to the Executive Officer for approval for sampling domestic wells and state small water systems for nitrate as nitrogen (as N) or nitrate + nitrite (as N). Upon Executive Officer approval of the water quality sampling work plan, the plan must be implemented. The plan must include the following:

    a. A strategy for notifying residents about the availability of free water quality sampling, their sampling results, and the benefits available through the AWSP.

    b. A plan for funding or otherwise performing co-contaminant sampling.

    c. A SAP and QAPP for collecting and analyzing water quality samples (**Section H**).

    d. A plan for conducting a domestic well survey, as described in **Order, Part 2, Section D.2, paragraph 33.**

    e. A plan for achieving the water quality sampling milestones in **Order, Part 2, Section D.2**.

12. **Funding and Implementation Work Plans:** AWSP Dischargers or AWSP administrators, on behalf of the Dischargers, must submit interim and long-term funding and implementation work plans. These work plans describe how AWSP Dischargers or their administrator(s) will fund and implement interim AWS and long-term drinking water solutions.

    a. **Interim AWS Funding and Implementation work plan: By the 24th month** after approval of an AWSP administrator by the Executive Officer, AWSP pathway Dischargers must submit this work plan to the Executive Officer for approval.

    b. **Long-Term Drinking Water Solutions Funding and Implementation work plan: By the 120th month** after approval of an AWSP administrator by the Executive Officer, AWSP pathway Dischargers must submit this work plan to the Executive Officer for approval.

c. **All Funding and Implementation work plans** (Interim and Long-term) must include the following elements:

    a. A process for developing funding or cost-sharing agreements, including identification of local, state, and federal funding sources.

b. An approach for prioritizing water systems and domestic wells to receive AWSP benefits that considers all of the following:

   i. Socioeconomic status of eligible residents.

   ii. Severity of nitrate pollution.

   iii. Areas with a high concentration of affected residents

   iv. Presence of sensitive populations such as daycares and schools.

   v. The number of residents that could be served by a particular solution.

   vi. The cost of the proposed solution relative to the AWSP budget.

   vii. The Central Coast Water Board's Racial Equity[19] and Human Right to Water[20] Resolutions.

c. A timeline for implementation with milestones for evaluating progress.

d. A description of how impacted residents and community-based organizations will be engaged in planning and implementation.

e. A strategy for ensuring equitable access to AWS for renters, undocumented residents, and those with limited mobility or internet access.

f. A monitoring and evaluation framework to track implementation progress, assess effectiveness, and identify areas for improvement.

13. **Interim AWS Funding and Implementation Plans** must also include the following additional information:

    a. An estimate of the cost of administering the AWSP and providing interim AWS for 10 years from the date of plan completion.

    b. A plan for funding the provision of interim AWS to all impacted residents within 10 years from the date of this Order adoption.

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[19] Racial Equity resolution, Resolution R3-2023-0002 Condemning Racism, Xenophobia, Bigotry, and Racial Injustice and Strengthening Commitment to Racial Equity, Diversity, Inclusion, Access, and Anti-Racism in the Central Coast Region: **https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2023/r3-2023-0002.pdf**

[20] Human Right to Water Resolution, Resolution R3-2017-0004 Adopting the Human Right to Water as a Core Value and Directing Its Implementation in Central Coast Water Board Programs and Activities: **https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2017/2017-0004_hrtw_fnl.pdf**

c. A plan for offering interim AWS to all impacted residents within 10 years from the date of this Order adoption.

d. A description of the types of interim AWS to be provided (e.g., bottled water, kiosks, point-of-use treatment, etc.) and the rationale for their selection.

e. A contingency plan to address potential disruptions in funding, supply, delivery, or O&M of interim AWS.

f. A plan for ensuring that interim solutions serve in part as a tool for building relationships with community partners to co-develop long-term drinking water solutions.

g. An approach for funding and implementing long-term solution planning and prioritization in accordance with applicable milestones in the Order.

14. **Long-Term Drinking Water Solutions Funding and Implementation Plans** must also include the following additional information:

a. A summary of the results of long-term drinking water solution prioritization and planning.

b. A prioritization strategy for the provision of long-term drinking water solutions and the rationale behind the prioritization.

c. An estimate of the cost of providing long-term drinking water solutions to all impacted residents.

d. A plan for funding and providing long-term drinking water solutions to all impacted residents within 20 years from the date of plan completion.

e. A strategy for integrating long-term drinking water solution development with regional water planning efforts (e.g., Sustainable Groundwater Management Act, Integrated Regional Water Management, SAFER, etc.).

15. **Public Awareness and Transparency**: **By the 36th month** after approval of approval of an AWSP administrator by the Executive Officer, AWSP Dischargers or their AWSP administrator must publish and maintain a public-facing website that includes the following information:

a. The estimated need for AWS in the Central Coast region, based on the most recent Executive Officer approved need assessment;

b. The number of households receiving interim AWS and the types of AWS provided;

c. The estimated number of households waiting for AWS;

d. The number of households that have been tested and exceed the MCL;

e. The types and amounts of outreach methods implemented, including information on which outreach methods result in contact by target residents;

f. The amount and type of public meetings held; and

g. Maps of areas potentially eligible for services from the AWSP.

16. **Domestic Well and State Small Water System Long-Term Solution Planning and Prioritization Focus Area Report: By the 60th month** following approval of the AWSP administrator by the Executive Officer, AWSP Dischargers or AWSP administrators, on behalf of AWSP Dischargers, must submit a report to the Executive Officer for approval summarizing efforts to identify focus areas for implementation of long-term solutions for domestic wells and state small water systems. Identification of focus areas is intended to ensure that efforts for implementing long-term solutions are targeted at the most vulnerable residents and communities. Identification of focus areas is defined in **Attachment C**.

17. **Long-Term Drinking Water Solution Planning and Prioritization Completion Report: By the 120th month** following approval of the AWSP administrator by the Executive Officer, AWSP Dischargers or AWSP administrators, on behalf of AWSP Dischargers, must submit a report to the Executive Officer for approval, summarizing the results of planning and prioritization of long-term solutions for public and state small water systems and domestic wells. Planning and prioritization of long-term solutions, including identifying focus areas, is defined in **Attachment C.** The report must include at a minimum, the following elements:

    a. **Summary of Community Engagement and Outreach:** Document how affected residents, community-based organizations, and system operators were informed, engaged, and included in planning and outreach. Include an evaluation of engagement effectiveness relative to needs and plan commitments.

    b. **Prioritization Framework and Outcomes:** Demonstrate how the AWSP administrator applied the required prioritization framework from the Funding and Implementation Plans in conducting long-term drinking water solution planning and prioritization, including:

        i. Severity of nitrate contamination

        ii. Sensitive populations

        iii. Equity considerations

        iv. Scale of benefit (number residents served)

        v. Cost effectiveness.

c. **Completion of Order Requirement:** Document compliance with the requirements for long-term solution planning and prioritization in **Order, Part 2, Section D.2**.

d. **Final Cost Estimates:** Provide updated cost estimates for each long-term solution, each focus area, each affected PWS, and indicate expected AWSP contributions and anticipated co-funding sources.

e. **For Public Water Systems, include the following additional information:**

   i. A comprehensive summary of long-term solution planning outcomes for all public water systems requiring long-term solutions.

   ii. Engineering reports for each PWS, as attachments, that are consistent with the definition of long-term drinking water solutions planning and prioritization in **Attachment C**, including:

      1. Technical feasibility and alternatives analysis;
      2. Capital and O&M cost estimates;
      3. Funding opportunities and financing strategies;
      4. Implementation timelines;
      5. Community engagement documentation;
      6. Evaluation of multi-benefit or consolidation opportunities;
      7. Description of coordination with Division of Drinking Water (DDW), the State Water Board Division of Financial Assistance, and other technical assistance entities.

f. **For State Small Water Systems and Domestic Wells:**

   i. A summary of the long-term solutions identified for each focus area.

   ii. For each focus area, include:

      1. The data and methodologies used to identify the focus area;
      2. Maps illustrating focus area boundaries, well locations, and system locations;
      3. A description of the planning and prioritization process outcomes for each focus area.

   iii. For each identified long-term solution in focus areas, provide:

      1. Technical and financial feasibility findings;
      2. Anticipated funding sources;
      3. Implementation timelines;
      4. Identification of barriers and proposed approaches to address them;
      5. A summary of community engagement findings relevant to solution selection.

   iv. For wells and water systems outside of focus areas:

1. Estimate the number of wells, water systems, and residents not included in long-term solution focus areas;
2. Identify the types of interim AWS relied upon by these residents;
3. Estimate the ongoing cost of providing AWS to these residents and develop a plan for provision of interim solutions for the next ten years.

Optional Reporting

18. **Interim Need Assessment Update Report:** AWSP Dischargers may submit a report that estimates the current need for interim AWS and long-term drinking water solutions. The report is optional, and its findings may only be used to inform evaluation of progress toward funding and implementation milestones in **Order, Part 2, Section D.2** if the Executive Officer approves the report. If approved, this Interim Need Assessment Update Report will be used to estimate need for interim AWS supplies and long-term drinking water solutions instead of the Central Coast Water Board's Interim Need Assessment. If no report is approved by the Executive Officer, the Central Coast Water Board's Interim Need Assessment will be used to estimate need.

19. To receive Executive Officer approval, the Need Assessment Update Report must:

    a. Identify the number of domestic wells and water systems that exceed the MCL for nitrate as a result of agricultural operations and that therefore require interim AWS and long-term drinking water solutions.

    b. Utilize information obtained through implementation of the AWSP, including but not limited to results of water quality sampling, the domestic well survey, and other program data sources. Any additional sources of information used to estimate need must be clearly described and justified.

    c. Compare the updated need estimate to previous assessments and describe the reasons for any differences, including whether new data, improved methodologies, or changed conditions contributed to the revised estimate.

20. AWSP Dischargers or their AWSP administrator may submit subsequent Need Assessment Update Reports for Executive Officer approval as new information becomes available, but no later than December 31, 2036.

Section E. Third-Party Alternative Compliance Pathway for Groundwater Protection

This section contains monitoring and reporting requirements associated with the development and implementation of the third-party alternative compliance pathway program for groundwater protection and the effectiveness assessment and evaluation outlined in **Order, Part 2, Section D.2**. Note that participation in the third party

alternative compliance pathway for groundwater protection requires that Dischargers also participate in the AWSP compliance pathway.

1. Members in good standing with the third-party alternative compliance pathway program are referred to as "participating Dischargers."

2. An approved third-party alternative compliance pathway program administrator, on behalf of its participating Dischargers, must develop and submit incremental draft and final work plans by the timeframes specified below.

    a. Submit the **first draft (35%) work plan** within 24 months of Order adoption.

    b. Submit the **second draft (70%) work plan** within 18 months of a first draft work plan conditional approval by the Executive Officer.

    c. Submit the **final (100%) work plan** within 10 months of a second draft work plan conditional approval by the Executive Officer.

3. The **first draft (35%) work plan** must include the following, at a minimum:

    a. Proposed groundwater protection (GWP) areas and supporting scientific justification,

    b. Proposed GWP formulas, objectives, and supporting scientific justification,

    c. GWP value methodology and objectives,

    d. GWP target methodology and objectives,

    e. Follow-up action and consequence concepts if targets are not achieved, and

    f. Assessment and evaluation program outline, methodology, and objectives.

4. The **second draft (70%) work plan** must include the following, at a minimum:

    a. Conditionally approved GWP areas,

    b. Conditionally approved GWP formulas,

    c. Proposed GWP values, objectives, and supporting scientific justification,

    d. Proposed GWP targets and supporting scientific justification,

    e. Proposed time schedule for achieving proposed interim GWP targets and the final GWP target by 2051,

    f. Proposed follow-up actions and consequences if targets are not achieved, and

    g. Draft assessment and evaluation program and associated objectives and rationale.

5. The **final (100%) work plan** must include the following, at a minimum:
    a. Conditionally approved GWP areas,
    b. Conditionally approved GWP formulas,
    c. Conditionally approved GWP values,
    d. Conditionally approved GWP targets,
    e. Final time schedules for achieving proposed interim GWP targets and the final GWP target by 2051,
    f. Conditionally approved follow-up actions and consequences if targets are not achieved within the final time schedules, and
    g. Final assessment and evaluation program.

Monitoring and Reporting

6. Participating Dischargers must submit ACF, TNA, and INMP Summary information according to requirements outlined in the **Order, Part 2, Section C** and as described in this MRP in **Section B**.
7. Participating Dischargers must submit Groundwater Monitoring and Reporting information according to requirements outlined in the **Order, Part 2, Section C** and as described in this MRP in **Section C**.

Section F. Surface Water Monitoring and Reporting

This section contains three types of monitoring and reporting related to surface water quality: ***Surface Receiving Water Quality Trends*** and ***Follow-Up Surface Receiving Water Implementation*** that are required of all Dischargers and ***Ranch-Level Surface Discharge*** that must be completed when required by the Executive Officer.

Surface Receiving Water Quality Trends

1. Dischargers must conduct **surface receiving water quality trends monitoring and reporting**, either individually or as part of a third-party effort, to explicitly achieve the following objectives:
    a. Evaluate the impact of irrigated agricultural waste discharges on surface receiving waters;
    b. Evaluate compliance with the surface receiving water numeric limits described in the Order;
    c. Evaluate the status of surface receiving water quality, including whether water quality objectives are attained, and beneficial uses are protected;
    d. Evaluate short-term patterns and long-term trends (five to ten years or more) in surface receiving water quality;

e. Evaluate water quality impacts of tile drain discharges from irrigated agricultural operations;

f. Evaluate water quality impacts of stormwater discharges from irrigated agricultural operations;

g. Evaluate the condition of existing perennial, intermittent, and ephemeral streams and riparian and wetland areas, including degradation resulting from erosion or irrigated agricultural discharges of waste; and

h. Assist in the identification of specific sources of water quality problems.

2. Prior to the initiation of the work plan process outlined below, entities wishing to implement a third-party program must submit a third-party program proposal consistent with the third-party program requirements outlined in **Order, Part 2, Section A** as well as the request for proposal process and associated third-party program expectations document forthcoming after Order adoption.

3. **By July 1, 2022, or July 1 after enrollment**, Dischargers, either individually or as part of a third-party program, must submit a surface receiving water quality trends work plan including a SAP and QAPP (see **Section H**). The SAP must be developed to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The SAP may propose, for Executive Officer approval, alternative monitoring and reporting site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of irrigated agricultural waste discharges to receiving water. The Executive Officer must approve the work plan, SAP, and QAPP prior to implementation.

4. Dischargers, either individually or as part of a third-party program, must perform surface receiving water quality trend monitoring and reporting in accordance with the work plan, SAP, and QAPP approved by the Executive Officer.

   a. Unless otherwise approved by the Executive Officer, the work plan must include, but need not be limited to, the following: Monitoring sites to evaluate waterbodies identified in **Table MRP-8**, unless otherwise approved by the Executive Officer. The SAP must include sites to evaluate surface receiving water quality impacts most directly resulting from areas of irrigated agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long-term monitoring sites included in related monitoring programs (e.g., Central Coast Ambient Monitoring Program (CCAMP) and the existing third-party monitoring program). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to surface receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trends evaluation and are subject to Executive Officer approval.

b. Unless otherwise approved by the Executive Officer, the work plan must include the types of monitoring and evaluation parameters listed below and identified in **Table MRP-9**. Any modifications to monitoring and evaluation parameters listed below and in **Table MRP-11** are subject to Executive Officer approval.

   i. Flow monitoring;

   ii. Water quality (physical parameters, metals, nutrients, pesticides);

   iii. Toxicity (water and sediment);

   iv. Assessment of benthic invertebrates, physical habitat monitoring, and Riparian Rapid Assessment Method (RipRAM) monitoring.

c. A schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. **Table MRP-11** includes monitoring frequency and parameter lists unless approved by the Executive Officer. Proposed modifications to the timing, duration, and frequency of monitoring must be submitted to the Executive Officer for consideration and approval. Agricultural parameters that are less common may be monitored less frequently, subject to Executive Officer approval. Modifications to the receiving water quality monitoring parameters, frequency, and schedule must be submitted for Executive Officer consideration and approval. At a minimum, unless otherwise approved by the Executive Officer, the SAP schedule must consist of monthly monitoring of common agricultural parameters at surface receiving water quality trend sites established in the SAP, including two major storm events during the wet season (October 1 – April 30).

d. Water column toxicity analyses must be conducted on 100% (undiluted) samples. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

e. Stormwater monitoring must be conducted to characterize stormwater flows. Every effort must be made to conduct monitoring within 18 hours of storm events, preferably including the first flush run-off event (see definition in Attachment C) that results in significant increase in stream flow. For the purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion, or other water quality problems. A significant storm event will generally result in greater than a half-inch of rain within a 24-hour period.

5. **By January 1**, following approval of the work plan, monitoring must begin immediately.

6. **By January 1, April 1, July 1, and October 1 of each year**, Dischargers, either individually or as part of a third-party program, must submit water quality monitoring data electronically to CEDEN, according to CEDEN submittal guidelines, or in a format specified by the Executive Officer.

7. **By July 1 annually**, Dischargers, either individually or as part of a third-party program, must submit an Annual Report for the previous year of collected data, electronically, in a format specified by the Executive Officer. At a minimum, the Annual Report must include the following elements, unless otherwise approved by the Executive Officer:

    a. Signed transmittal letter;

    b. Title page;

    c. Table of contents;

    d. Executive summary;

    e. Monitoring objectives and design;

    f. Monitoring site descriptions and rainfall records for the time period covered;

    g. Location of monitoring sites and map(s);

    h. Results of all analyses arranged in tabular form so that the required information is readily discernible;

    i. Summary of water quality data for any sites monitored as part of related monitoring programs and used to evaluate receiving water as described in the SAP;

    j. Discussion of data to clearly illustrate compliance with the Order, water quality standards (i.e., water quality objectives and designated beneficial uses), and surface receiving water numeric limits required by the Order, including watershed-level data analysis for each hydrologic subarea in **Table MRP-10** (for example data analysis and discussion for sub-watersheds 30510, 30530, etc.);

    k. Discussion of short-term patterns and long-term trends in surface receiving water quality and beneficial use protection;

    l. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for TIEs;

    m. Sampling and analytical methods used;

    n. Copy of chain-of-custody forms;

    o. Field data sheets, signed laboratory reports, laboratory raw data;

p. Associated laboratory and field quality control samples results;

q. Summary of Quality Assurance Evaluation results;

r. The method used to obtain flow at each monitoring site during each monitoring event;

s. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;

t. Potential follow-up actions to correct any observed exceedances of the surface receiving water numeric limits;

u. Conclusions.

Follow-Up Surface Receiving Water Implementation

8. Dischargers must develop and implement a follow-up surface receiving water implementation work plan, either individually or as part of a third-party effort, to explicitly achieve the following objectives.

    a. Identify and abate source of water quality impacts;

    b. Evaluate the impact of irrigated agricultural waste discharges on surface receiving waters;

    c. Evaluate the condition of existing perennial, intermittent, and ephemeral streams and riparian and wetland areas, including degradation resulting from erosion or irrigated agricultural discharges of waste;

    d. Evaluate compliance with the numeric limits described in the Order; and

    e. Identify follow-up actions, including outreach, education, additional monitoring and reporting, and management practice implementation that will be implemented to achieve compliance with the numeric limits described in the Order.

9. Prior to the initiation of the work plan process outlined below, entities wishing to implement a third-party program must submit a third-party program proposal consistent with the third-party program requirements outlined in **Order, Part 2, Section A** as well as the request for proposal process and associated third-party program expectations document forthcoming after Order adoption. Ranches that are enrolled as part of an approved third-party follow-up surface receiving water implementation program are assigned the Surface Water Priority of high priority, medium priority, or low priority of the drainage unit where the ranch is located, as shown in **Table C.3-1.3P** and the map shown in **Figure C-3.1.3P** in the **Order**.

10. Unless otherwise approved by the Executive Officer, the work plan must include, but need not be limited to, the following:

a. Description of implementation measures that will be taken to reduce the discharge of relevant constituents and comply with the limits established in the Order.

b. Numeric interim quantifiable milestones to confirm progress is being made to reduce the discharge of relevant constituents and achieve the numeric limits established in the Order, consistent with their time schedule. Numeric quantifiable milestones include numeric interim quantifiable milestones for relevant constituents (e.g., pollutant load or concentration) and numeric interim quantifiable milestones for management practices implemented that confirm progress towards reducing the discharge of relevant constituents (e.g., volume of discharge water diverted to treatment systems, treatment system pollutant reduction, distance of riparian area improvements, acres no longer receiving conventional pesticide applications).

c. Consideration of the level of water quality impairment identified through surface receiving water monitoring. Work plans for areas with persistent exceedances of the surface receiving water numeric limits in the Order must identify follow-up actions to restore the degraded areas (e.g., outreach, education, management practice implementation) and additional surface receiving water monitoring locations for pollutant source identification and abatement. Work plans for areas that are already achieving the surface receiving water numeric limits in the Order must identify actions to be taken to protect the high-quality areas (e.g., outreach and education).

d. Where appropriate based on water quality data, follow-up surface receiving water monitoring sites to further evaluate the waterbody(s). The work plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of irrigated agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long-term monitoring sites included in related monitoring programs (e.g., CCAMP and the existing third-party monitoring program). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges.

e. SAP and QAPP (see **Section H**). The SAP must be developed to describe how the proposed monitoring will achieve the objectives of the MRP, identify additional follow-up monitoring sites upstream of observed exceedances to identify sources of the exceedances, and evaluate compliance with the limits established in the Order.

f. The parameters to be monitored through follow-up surface receiving water monitoring may vary based on the water quality exceedances observed at downstream sites through the surface receiving water trend monitoring.

The work plan must, at a minimum, include the types of monitoring and evaluation of parameters identified by the Executive Officer as requiring follow-up monitoring, such as the parameters listed below and identified in **Table MRP-11**.

i. Flow monitoring;

ii. Water quality (physical parameters, metals, nutrients, pesticides); and

iii. Toxicity (water and sediment).

g. A schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. **Table MRP-11** includes minimum monitoring frequency for parameters requiring follow-up monitoring. Agricultural parameters that are less common may be monitored less frequently. Modifications to the follow-up surface receiving water monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the work plan schedule must consist of monthly monitoring of common agricultural parameters, including two major storm events during the wet season (October 1 – April 30).

h. If water column toxicity analyses must be conducted to comply with follow-up surface receiving water monitoring requirements, the analyses must be performed on 100% (undiluted) samples. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a TIE to identify the individual discharges causing the toxicity.

i. Stormwater monitoring must be conducted to characterize stormwater flows. Every effort must be made to conduct monitoring within 18 hours of storm events, preferably including the first flush run-off event (see definition in **Attachment C**) that results in significant increase in stream flow. For the purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion, or other water quality problems. A significant storm event will generally result in greater than half-inch of rain within a 24-hour period.

11. **By January 1, April 1, July 1, and October 1 of each year**, Dischargers, either individually or as part of a third-party program, must submit follow-up surface receiving water quality monitoring data electronically to CEDEN, according to CEDEN submittal guidelines, or in a format specified by the Executive Officer.

12. **By July 1 annually**, Dischargers, either individually or as part of a third-party program, must submit an Annual Report for the previous year of collected data, electronically, in a format specified by the Executive Officer. Unless otherwise

approved by the Executive Officer, the work plan must include, but need not be limited to, the following:

a. Signed transmittal letter;

b. Title page;

c. Table of contents;

d. Executive summary;

e. Monitoring objectives and design;

f. Monitoring site descriptions and rainfall records for the time period covered;

g. Location of monitoring sites and map(s);

h. Results of all analyses arranged in tabular form so that the required information is readily discernible;

i. Summary of water quality data for any sites monitored as part of related monitoring programs and used to evaluate receiving water as described in the work plan;

j. Discussion of data to clearly illustrate compliance with the Order, water quality standards (i.e., water quality objectives and designated beneficial uses), and surface receiving water numeric limits required by the Order;

k. Discussion of specific information about the identified sources of water quality impairment;

l. Discussion of management practice implementation and other follow-up activities performed to correct the persistent water quality impairment;

m. Sampling and analytical methods used;

n. Copy of chain-of-custody forms;

o. Field data sheets, signed laboratory reports, laboratory raw data;

p. Associated laboratory and field quality control samples results;

q. Summary of Quality Assurance Evaluation results;

r. The method used to obtain flow at each monitoring site during each monitoring event;

s. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date; and

t. Conclusions.

Ranch-Level Surface Discharge

13. When required by the Executive Officer, based on surface receiving water quality data or significant and repeated exceedance of the surface receiving water quality limits in the **Order**, **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity, Dischargers must conduct **ranch-level surface water discharge monitoring and reporting.** Such monitoring and reporting efforts, including planning, must be explicitly designed and implemented to achieve the following objectives:

    a. Assess and quantify the Discharger's contribution to the exceedance of applicable surface receiving water numeric limits, including concentration and loading for all applicable parameters in their discharge;

    b. Evaluate effects of the discharge on surface receiving water quality and beneficial uses; and

    c. Demonstrate compliance with applicable surface receiving water numeric limits and water quality objectives over time.

14. **Within 120 days**[21] of being required to conduct ranch-level surface discharge monitoring, Dischargers must submit a ranch-level surface discharge work plan, to the Executive Officer for approval prior to implementation. The work plan will be in a format specified by the Executive Officer. The Discharger may choose to submit and implement the work plan either individually or through participation in an approved third party. The work plan must include a SAP and QAPP (see **Section H**) designed to monitor individual discharges of irrigation water and stormwater that leave the ranch from an outfall location, including tile drain discharge points, and at a minimum, include the following elements, unless otherwise approved by the Executive Officer.

    a. A schedule for work plan implementation;

    b. Description of monitoring methodologies, frequencies, and analytical methods of all applicable parameters where exceedances have occurred or are occurring;

    c. Description of monitoring methodologies and frequencies to measure flow volumes;

[21] Central Coast Water Board staff will inform the Discharger and/or the third party representing the Discharger **90** days before the Executive Officer intends to require ranch-level surface discharge monitoring. The purpose of this advance notice is to provide flexibility to Dischargers in the event that circumstances beyond their control have adversely impacted the ability to achieve surface receiving water numeric limits by the compliance dates.

d. Quantification of the Discharger's impact on surface receiving water quality;

e. Description of how ranch-level surface discharge monitoring data will be used to assess and improve management practices; and

f. Description of how surface receiving water numeric limits and water quality objectives will be achieved over time.

15. **Within 90 days** of receiving Executive Officer approval, or in accordance with an alternate schedule approved in the work plan, the work plan must be implemented.

16. Dischargers must select monitoring sites that characterize both irrigation and stormwater discharges. For irrigation discharge, Dischargers must select monitoring points to characterize at least 80 percent of the estimated maximum irrigation discharge volume, based on the typical discharge patterns of the ranch, and must include points of tailwater and tile drain (if present) discharges. The SAP must be designed such that monitoring must occurs when it is highly probable that the irrigation discharge volume is the greatest during an irrigation event. Stormwater discharge sites must be selected to characterize the majority of stormwater discharge and must include first-flush monitoring. All selected monitoring sites must characterize discharge from the required farm/ranch, i.e., the discharge is not comingled with discharge from adjacent farms.

17. Dischargers must conduct monitoring for all parameters necessary to achieve the goals described for individual ranch-level surface discharge monitoring.

18. Analytical methods, maximum practical quantitation limits (PQL), and reporting limits (RL) must be consistent with those outlined in **Section H**, or as approved by the Executive Officer.

19. Individual ranch-level surface discharge sampling must occur at each site a minimum of four times per year, with one sample drawn during each of the following calendar quarters: **January to March**, **April to June**, **July to September**, **October to December**, or as approved by the Executive Officer.

20. **By March 1 and September 1 of each year**, Dischargers must submit individual ranch-level surface discharge monitoring data and information for the previous year of collected data, electronically, in a format specified by the Executive Officer and contain, at a minimum, the following elements, unless otherwise approved by the Executive Officer.

    a. All data and information from monitoring occurring in the preceding two calendar quarters and data not yet reported on previous semi-annual reports.

    b. Data in a tabular format, showing all data for each parameter and each monitoring event.

c. Electronic laboratory data.

d. All reports of results must contain the ranch name and Global ID, site name(s), project contact, and date.

e. 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.

f. Electronic laboratory data reports of toxicity results shall include summary results comparable to those required in a CEDEN file delivery, including test and control results. For each test result, the mean, associated control performance, calculated percent of control, statistical test results and determination of toxicity, must be included. Test results must specify the control ID used to calculate statistical outcomes.

g. Field data results, including temperature, pH, conductivity, turbidity and flow measurements, any field duplicates or blanks, and field observations.

h. Calculations of un-ionized ammonia concentrations (based on total ammonia value and field measurements for pH and water temperature).

i. Calculations of total flow and pollutant loading (for nitrate, pesticides if sampled, total ammonia, and turbidity) (include formulas).

j. Location of sampling sites and map(s).

k. Sampling and analytical methods used.

l. Specify the method used to obtain flow at each monitoring site during each monitoring event.

m. Photos obtained from all monitoring sites, clearly labeled with location and date.

n. Sample chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff, upon request.

Section G. Annual Compliance Form (ACF)

1. **By March 1, 2022, and annually thereafter by March 1**, all Dischargers must submit an ACF electronically, in a format specified by the Executive Officer. The ACF includes, but is not limited to, the items listed below.

   a. Irrigation, stormwater, and tile drain discharge characteristics (e.g., number of discharge points, estimated flow and volume, and number of tailwater days).

   b. Status of Farm Plan development and implementation.

c. Identification of specific water quality management practices implemented and assessed for effectiveness on the ranch to reduce water quality impacts, including:

   i. Irrigation management practices;

   ii. Nutrient management practices;

   iii. Salinity management practices;

   iv. Pesticide management practices;

   v. Sediment and erosion management practices; and

   vi. Stormwater management practices.

d. Reporting an estimation of riparian area (average width and length, in feet) for dischargers with waterbodies within or bordering their ranch.22

e. Reporting on water quality and management practice education obtained.

f. Reporting on additional education, name of INMP certified professional, or additional monitoring for nitrogen discharge outliers.

Section H. Sampling and Analysis Plan and Quality Assurance Project Plan

1. The Sampling and Analysis Plan (SAP) must include the following minimum components as applicable depending on the monitoring requirement:

   a. Monitoring strategy to achieve objectives of the Order and MRP;

   b. Map and Global Positioning System (GPS) coordinates of monitoring sites (e.g., well, receiving water locations, outfall locations etc.);

   c. Monitoring parameters;

   d. Monitoring schedule, including description and frequencies of monitoring events;

   e. Identification of beneficial uses and applicable water quality objectives;

   f. Identification of known water quality impairments and impaired waterbodies per the most recent USEPA approved Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies) – only applicable to SAPs for surface water;

   g. Identification of applicable Total Maximum Daily Loads (TMDLs) – only applicable to SAPs for surface water;

[22] The Annual Compliance Form includes instructions on how to measure and report riparian areas.

h. Sample collection and handling procedures (e.g., preservation, storage, transport, holding times, etc.);

i. Chain of custody procedures;

j. Quality Assurance and Quality Control (QA/QC) sampling and analysis criteria and procedures;

k. Data management and reporting procedures; and

l. Description of data analytical methods, specifications, and limits (e.g., PQL and RL).

2. The QAPP must include site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analysis and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the monitoring program. All sampling and laboratory methodologies and QAPP content must be consistent with USEPA methods. Following USEPA guidelines,[23] the monitoring QAPP must include the following minimum required components:

   a. Project Management: Address basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.

   b. Data Generation and Acquisition: Address all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.

   c. Assessment and Oversight: Address the activities for assessing the effectiveness of the implementation of the project and associated quality assurance (QA) and quality control (QC) activities. The purpose of the assessment is to provide project oversight that will ensure that the QAPP is implemented as prescribed.

   d. Data Validation and Usability: Address the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives. The Executive Officer may conduct an audit of contracted

[23] USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5.

laboratories at any time in order to evaluate compliance with the SAP and QAPP.

3. The SAP and QAPP, and any proposed revisions, are subject to approval by the Executive Officer. The Executive Officer may also revise the SAP, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of irrigated agricultural discharges on water quality.

Tables related to Monitoring and Reporting Requirements

Tables related to Section B: Irrigation and Nutrient Management Plan Monitoring and Reporting Requirements

Table MRP-1. Comparison of TNA and INMP Summary Monitoring and Reporting

Required Information	TNA Monitoring & Reporting	INMP Monitoring & Reporting
Nitrogen applied	X	X
Nitrogen removed		X
Irrigation management information	X	X

Table MRP-2. Monitoring and Reporting Schedule for Irrigation and Nutrient Management

Ranches	TNA[1] Monitoring Period[2]	TNA Report Due March 1	Annual INMP[3] Monitoring Period[2]	Annual INMP Summary Report Due March 1
Required per Ag Order 3.0	2021 2022	2022 2023	-	-
Groundwater Phase Area 1 [4]	-	-	Beginning 2023	Beginning 2024
Groundwater Phase Area 2	2023 2024	2024 2025	Beginning 2025	Beginning 2026
Groundwater Phase Area 3	2023 2024 2025	2024 2025 2026	Beginning 2026	Beginning 2027

[1] Only the primary irrigation well must be monitored for TNA monitoring and reporting.
[2] Monitoring period = calendar year (Jan. 1 – Dec. 31).
[3] All irrigation wells must be monitored for INMP monitoring and INMP Summary reporting.
[4] Dischargers in Groundwater Phase 1 areas are not required to submit a stand-alone TNA report; rather, due to the prioritization of Phase 1 areas, Dischargers in portions of the Gilroy-Hollister Valley (Llagas Area) groundwater basin, the Forebay Aquifer and Upper Valley subbasins of the Salinas Valley basin, the Santa Maria area of the Santa Maria River Valley basin, and the Santa Ynez River Valley basin must conduct the expanded nitrogen applied and removed monitoring and reporting associated with INMP Summary reporting before Dischargers in Groundwater Phase areas 2 and 3.

Tables related to Section C: Groundwater Monitoring and Reporting

Table MRP-4. On-Farm Domestic and Dual-Use Well Monitoring and Reporting Requirements

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field Measurement[3]	pH Units	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Specific conductance	2.5	Field Measurement[3]	µS/cm	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Temperature	0.1	Field Measurement[3]	°C	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Nitrate + nitrite (as N)[4] *or* Nitrate as N	0.1	USEPA Method 300 or SM 4500NO3	mg/L	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
1,2,3-Trichloropropane (1,2,3-TCP)	0.005	SRL-524M	µg/L	Annual per above for first 2 years (2022 & 2023). Continue annual monitoring and reporting until 2 consecutive samples = non-detect; then resample 3 years since last non-detect. If non-detect 3 years after last 2 consecutive non-detects, no further monitoring. If detected 3 years after last 2 consecutive non-detects, annual sampling resumes.	**Monitoring** March 1 – May 31 **Reported** by July 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-5. Primary Irrigation Well Monitoring and Reporting Requirements Until Groundwater Quality Trends Monitoring Program Starts ("Pre-Trend")

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field Measurement[3]	pH Units	**Annual** until Groundwater Quality Trends Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Specific conductance	2.5	Field Measurement[3]	µS/cm	**Annual** until Groundwater Quality Trends Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Temperature	0.1	Field Measurement[3]	°C	**Annual** until Groundwater Quality Trends Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	**Annual** until Groundwater Quality Trends Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Nitrate + nitrite (as N)[4] *or* Nitrate as N	0.1	USEPA Method 300 or SM 4500NO3	mg/L	**Annual** until Groundwater Quality Trends Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-6. Minimum Groundwater Quality Trends Monitoring and Reporting Requirements (Third-Party Option)

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Depth to groundwater	±0.01	Field Measurement	Feet	In accordance with approved Work Plan	In accordance with approved Work Plan
pH	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	pH Units	In accordance with approved Work Plan	In accordance with approved Work Plan
Specific conductance	2.5	Field[3] or Laboratory Measurement or USEPA General Methods	µS/cm	In accordance with approved Work Plan	In accordance with approved Work Plan
Temperature	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	°C	In accordance with approved Work Plan	In accordance with approved Work Plan
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Total alkalinity as $CaCO_3$	-	USEPA Method 310.1 or 310.2	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Calcium	0.05	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Magnesium	0.02	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Sodium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Potassium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Sulfate (SO_4)	1.0	General Anions USEPA Method 300	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Chloride	0.1	General Anions USEPA Method 300	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Nitrate + Nitrite (as N)[3] ***or*** **Nitrate as N**	0.1	General Anions USEPA Method 300 or SM 4500NO3	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-7. Minimum Groundwater Quality Trends Monitoring and Reporting Requirements (Individual Option)

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	pH Units	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Specific conductance	2.5	Field[3] or Laboratory Measurement or USEPA General Methods	µS/cm	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Temperature	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	°C	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Total alkalinity as $CaCO_3$	-	USEPA Method 310.1 or 310.2	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Calcium	0.05	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Magnesium	0.02	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Sodium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Potassium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Sulfate (SO_4)	1.0	General Anions USEPA Method 300	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Chloride	0.1	General Anions USEPA Method 300	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Nitrate + Nitrite (as N)[4] *or* Nitrate as N	0.1	General Anions USEPA Method 300 or SM 4500NO3	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trends Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.[3] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N).
[3] The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.
[4] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

Table MRP-8. Minimum Ranch-Level Groundwater Monitoring and Reporting Requirements

Parameter	RL[1]	Analytical Method[2]	Units	Frequency
Latitude and Longitude	±0.00001	Surveyed Location	Decimal Degrees relative to WGS84	Each Sampling event
Depth to groundwater	±0.01	Field Measurement	Feet	Semiannually
Groundwater Elevation	±0.01	Calculated	Feet relative to NAVD88	Semiannually
Groundwater Gradient	±0.01	Calculated	Feet/foot	Semiannually
Groundwater Gradient Direction	±1º	Calculated	Azimuth in degrees relative to north	Semiannually
pH	±0.1	Field Measurement[3]	pH Units	Semiannually
Dissolved oxygen	±0.1	Field Measurement[3]	mg/L	Semiannually
Specific conductance	2.5	Field Measurement[3]	µS/cm	Semiannually
Temperature	0.1	Field Measurement[3]	°C	Semiannually
Nitrate + nitrite (as N)[4] *or* Nitrate as N	0.1	USEPA Method 300 or SM 4500NO3	mg/L	Semiannually

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, dissolved oxygen: ± 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.
[5] No-purge, low-flow, or other sampling techniques are acceptable only if they are approved in advance by the Executive Officer and described in an approved sampling and analysis plan.

Table MRP-9. GeoTracker Electronic Submittal Information Data Requirements for Ranch-Level Groundwater and Root Zone Monitoring

Electronic Submittal	Description of Action	Action	Frequency
Reports and Documents	Complete copy of all monitoring documents including monitoring reports (in searchable PDF format) and any other associated documents related to the Ranch.	Upload directly to GeoTracker all monitoring reports (in searchable PDF format) and any other associated documents.	On or before the due dates required by this MRP
Laboratory Data	All analytical data in electronic deliverable format (EDF).	Upload, or direct your California ELAP-accredited laboratory staff to upload, all EDF laboratory data directly to GeoTracker.	On or before the due dates required by this MRP
Depth to Groundwater	Monitoring wells must have the depth-to-water information reported. Report data only for wells defined as permanent sampling points. Does not apply to ranch-level root zone monitoring.	Upload depth-to-water information to the GeoTracker GEO_WELL file.	Within 60 days of each quarterly groundwater monitoring event

Electronic Submittal	Description of Action	Action	Frequency
Boring Logs and Well Screen Intervals	Boring logs must be prepared by a registered professional and submitted in PDF format separately (not only as attachments to reports). Does not apply to ranch-level root zone monitoring.	Upload boring logs (in searchable PDF format) to GeoTracker GEO_BORE file	One-time, for all groundwater monitoring wells. For existing wells, upload within 60 days of approval of the ranch-level groundwater monitoring work plan. For new wells, upload withing 60 days of well completion.
Field Points, Location Data (Geo XY)[1]	Name, classify, and identify the location (latitude and longitude) of all sampling points. Monitoring wells must be surveyed. These data points are required prior to laboratory data uploads. Does not apply to ranch-level root zone monitoring.	Upload the location data (surveyed and non-surveyed) to the GeoTracker Geo_XY file.	Every time a permanent monitoring point is established.
Elevation Data (Geo Z)[2]	Survey and mark the elevation at the top of groundwater well casings for all permanent groundwater wells. These points are required prior to depth-to-water data uploads. Does not apply to ranch-level root zone monitoring.	Upload the survey data to the GeoTracker GEO_Z file.	One-time, for all groundwater monitoring wells.
Geo Map	Site layout and location of monitoring wells or other sampling points.	Upload the Site layout PDF to the GeoTracker site plan file.	Year one and every five years thereafter and when the facilities are modified.

Tables related to Section E: Surface Water Monitoring and Reporting

Table MRP-10. Major Waterbodies in Agricultural Areas

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek	31023	Los Osos Creek
30510	Beach Road Ditch	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek	31310	San Antonio Creek
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

Note: At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. These waterbodies are included because they are listed waterbodies on the most recent USEPA approved 303(d) List of Impaired Waters that are associated with areas of agricultural discharge. The list is subject to change based on most recent USEPA approved 303(d) List of Impaired Waters and/or other changes approved by the Executive Officer.

Table MRP-11. Surface Receiving Water Quality Monitoring Parameters and Frequency

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location	-	With every monitoring event
RipRAM		
RipRAM assessment and score at each monitoring location collected in accordance with the CCWG SOP	-	Annually beginning the first full calendar year following adoption of the Agricultural Order
Bioassessment		
Benthic invertebrate and associated physical habitat assessment collected in accordance with the SWAMP SOP. Data reported with CSCI numeric values for each monitoring location on Santa Ynez, Salinas, Santa Maria and Pajaro Rivers	-	Every five years beginning in 2023 from April-June
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	0.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	Monthly, including 2 stormwater events
Electrical Conductivity (field measure) (µS/cm)	2.5	Monthly, including 2 stormwater events

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Dissolved Oxygen (field measure) (mg/L)	0.1	Monthly, including 2 stormwater events
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Temperature (field measure) (ºC)	0.1	Monthly, including 2 stormwater events
Turbidity (NTU)	0.5	Monthly, including 2 stormwater events
Total Dissolved Solids (mg/L)	10	Monthly, including 2 stormwater events
Total Suspended Solids (mg/L)	0.5	Monthly, including 2 stormwater events
Total Alkalinity (as CaCO3)	EPA 310.1 or 310.2	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Calcium	0.05	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Magnesium	0.02	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Sodium	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December
Potassium	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Sulfate (SO4)	1.0	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Chloride	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
WATER COLUMN SAMPLING		
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events
Nitrate + Nitrite (mg/L as nitrogen)	0.1	Monthly, including 2 stormwater events
Total Ammonia (mg/L)	0.1	Monthly, including 2 stormwater events
Unionized Ammonia (calculated value including total ammonia and field measures of water temperature and pH, mg/L as nitrogen)	-	Monthly, including 2 stormwater events
Total Phosphorus (as P) (mg/L)	0.02	Monthly, including 2 stormwater events
Soluble Orthophosphate (mg/L)	0.01	Monthly, including 2 stormwater events
Water column chlorophyll a (µg/L)	1.0	Monthly, including 2 stormwater events
Algae cover, Floating Mats, % coverage	-	Monthly, including 2 stormwater events
Algae cover, Attached, % coverage	-	Monthly, including 2 stormwater events
Water Column Toxicity Test		
Algae - *Selenastrum capricornutum (*96-hour chronic; Method1003.0 in EPA/821/R-02/013)[10]	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Water Column Toxicity Test		
Water Flea – *Ceriodaphnia dubia* (7-day chronic; Method 1002.0 in EPA/821/R-02/013)[10]	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Midge - *Chironomus spp.* (96- hour acute; Alternate test species in EPA 821-R-02-012)[10]	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Chlorpyrifos	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Diazinon	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Dichlorvos	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Dimethoate	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Dimeton-s	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Disulfoton (Disyton)	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Malathion	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Methamidophos	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Methidathion	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Parathion-methyl	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Phorate	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Phosmet	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Neonicotinoids		
Thiamethoxam	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Imidacloprid	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Neonicotinoids		
Thiacloprid	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Dinotefuran	0.006	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Neonicotinoids		
Acetamiprid	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Clothianidin	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Carbamates		
Aldicarb	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Carbaryl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Carbamates		
Carbofuran	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Methiocarb	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Carbamates		
Methomyl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Oxamyl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Herbicides		
Atrazine	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Cyanazine	0.20	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Herbicides		
Diuron	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Glyphosate	2.0	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Herbicides		
Linuron	0.10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Paraquat	0.20	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Herbicides		
Simazine	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Trifluralin	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Metals (µg/L)		
Arsenic (total) [5,7]	0.3	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Boron (total) [6,7]	10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Cadmium (total & dissolved) [4,5,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Metals (µg/L)		
Copper (total and dissolved) [4,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Lead (total and dissolved) [4,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Nickel (total and dissolved) [4,7]	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Metals (µg/L)		
Molybdenum (total) [7]	1	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Selenium (total)[7]	0.30	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Metals (µg/L)		
Zinc (total and dissolved) [4,5,7]	0.10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Other (µg/L)		
Total Phenolic Compounds[8]	5	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
WATER COLUMN SAMPLING		
Other (µg/L)		
Hardness (mg/L as CaCO3)	1	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Total Organic Carbon (ug/L)	0.6	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
SEDIMENT SAMPLING		
Sediment Toxicity - *Hyalella azteca* 10-day static renewal (EPA, 2000)	-	2 times in 2021; once from April – June and once from August – October. Then once per year in calendar quarter April – June.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Lambda-cyhalothrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June “
Bifenthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Beta-cyfluthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Pyrethroid Pesticides in Sediment (µg/kg)		
Cyfluthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Esfenvalerate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Permethrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Cypermethrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Pyrethroid Pesticides in Sediment (µg/kg)		
Danitol	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Fenvalerate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Fluvalinate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Other Monitoring in Sediment		
Total Organic Carbon	0.01%	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Sediment Grain Size Analysis	1%	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

[1] Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plans implemented by individual growers or approved third-party programs, subject to Executive Officer approval.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.
[3] Reporting Limit, taken from SWAMP where applicable.
[4] Holmgren, Meyer, Cheney, and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.
[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8] Include Nonylphenol. Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption. Requirement may be removed or modified based on 2019-2020 monitoring results.
[9]See SWAMP field measures SOP, p. 17
[10]Where the salinity in receiving water samples exceeds the tolerance threshold for the freshwater toxicity test species, alternative test species will be used. Typical salinity-tolerant alternative test species include the following: *Thalassiosira sp.* instead of *Selenastrum sp.*, *Hyalella azteca* instead of *Ceriodaphnia dubia* or where salinity exceeds 15 parts per thousand *Americamysis bahia* instead of *Ceriodaphnia dubia*.
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second

Appendix 1: Ranch-Level Root Zone Monitoring Protocol for IDWP Dischargers

1. IDWP Dischargers must monitor one crop for an entire year, each year until they have demonstrated compliance with the final receiving groundwater limit in accordance with **Order, Part 2, Section C, paragraph 9**.

2. **Spatial Density of Samplers:** The number of porous cups must consider the uniformity of soils, irrigation, and cropping. There must be no fewer than eight monitoring locations per 40 acres within the crop block with the highest nitrogen discharge potential, based on the anticipated nitrogen **A**-**R**. Additional monitoring locations may be needed if there are highly variable soils or irrigation distribution uniformity.

3. **Sampling technology:** Samples must be collected using porous suction cup lysimeters designed for unsaturated zone porewater sampling. The technology used must be consistent with the description of porous cup sampling from Curley et al., 2011 unless a different technology is approved by the Executive Officer.

4. **Sampling frequency:** Samples must be collected no less frequently than once every two weeks during the planting/leaching periods. During the fallow periods, monitoring must continue no less frequently than monthly to evaluate leaching of residual nitrogen. During the first two weeks after porous cup sampler installation, sampling must occur weekly to confirm performance.

5. **Sampling triggers:** Collect additional samples after each irrigation event and after any rainfall event exceeding 0.5 inches.

6. **Sample interval:** samples should be collected using a discrete sampling approach with a sampling interval of 24-48 hours. If sample volume is not adequate after 48 hours, the sampling interval may be extended to a maximum of 72 hours.

7. **Placement Depth:** Porous cups must be installed no less than 0.5 inches below the deepest active root for the crop.

8. **Placement Distribution:** Porous cup samplers must be distributed across the irrigation management unit and there must be at least one sampler for each soil type present in the irrigation management unit. Soil types must be determined using the United States Department of Agriculture's Natural Resource Conservation District National Cooperative Soil Survey.

9. **Suction Settings:** Apply suction slightly greater than ambient soil matric suction to draw poor water without altering flow, typically -0.5 atm. Adjust seasonally (lower in wet conditions, higher in dry) to maintain flow. Document suction in field logs.

10. **Water Budget Logging:** To understand the factors driving nitrogen discharge beneath the root zone, the operator mut closely track various aspects of the irrigation water budget. This includes the volume and timing of irrigation water applied or precipitation received, evapotranspiration at the time of water application, estimated soil water holding capacity, and an estimate of deep percolation.

11. **Management Practice Tracking:** To understand how management practices are affecting nitrogen discharge beneath the root zone, Dischargers must closely track the timing of management practices relative to the water budget and nitrogen budget.