



# SAN JOAQUIN COUNTY & DELTA WATER QUALITY COALITION

(1/23/18) Board Meeting  
A-2239(a)-(c)  
Deadline: 12/22/17 by 12 noon



December 22, 2017

VIA E-Mail: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)

Chair Felicia Marcus and Fellow Board Members  
c/o Ms. Jeanine Townsend  
Clerk to the Board  
State Water Resource Control Board  
1001 I Street, 24<sup>th</sup> Floor  
Sacramento, CA 95812

Re: Comments to A-2239(a)-(c)

Dear Board Members:

The following comments are submitted on behalf of Petitioner San Joaquin County Resource Conservation District (District), the operating agency for the San Joaquin County and Delta Water Quality Coalition (SJCDWQC). Thank you for the opportunity to comment.

The SJCDWQC is operated by the District. The District's Board of Directors is made up of volunteers appointed by the San Joaquin County Board of Supervisors. The directors are farmers and business owners from the County. The SJCDWQC covers over 500,000 acres and includes over 4,000 members. The coalition's annual budget is \$2.6 million, with membership dues set at \$4.00 per acre. The District has been able to operate the coalition successfully for the last 12 years and has achieved notable water quality success in its area.

## 1. Individual Data

We appreciate the Board and staff's efforts on this matter. We are particularly pleased to see that the proposed order would maintain some anonymity for individual grower data as part of this program. As we have explained at various workshops, there is a significant fear among grower members of our coalition that individual data regarding nitrogen application will be incorrectly used to make unsubstantiated assumptions and accusations about causation for water quality problems. As we know, water quality problems are complex and require analysis of much more than just applied nitrogen on farms. Our coalition is committed to the current program and has shown that the program can work to improve water quality. But the program will only work if we can maintain our membership. Thank you again for appreciating this reality.



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## 2. High and Low Vulnerability Area and Priorities

The current order differentiates the reporting and certification requirements for low and high vulnerability areas to enable the coalitions and regional board to prioritize time and resources on areas that will have the largest impact on water quality. The proposed order departs from this approach by elevating the reporting and certification requirements for low vulnerability areas. For example, the proposed order would require that all growers in low vulnerability area have their irrigation and nitrogen management plans certified. The MPEP portion of the Attachment B of the proposed order also modifies the current program to expand the MPEP program beyond high vulnerability areas.

The additional certification requirement for low vulnerability areas alone would (1) consume significant additional coalition resources for follow-up with growers to facilitate compliance; (2) increased costs for growers; and (3) increase risk of non-compliance or untimely compliance due to the limited number of available professionals who can certify the plans.

The SJCDWQC area includes 3,434,118 acres, 2,787,571 acres of which are low vulnerability. Of the enrolled acres there are 206,980 acres in high vulnerability areas and 327,486 acres in low vulnerability areas. Irrigated land operations in low vulnerability areas have a lower risk of causing or contributing to water quality problems. SJCDWQC strongly recommends that the reporting and certifications for low vulnerability areas remain lower so that the coalition can focus limited resources on high vulnerability areas. This does not mean that growers in low vulnerability areas are subject to less scrutiny in their operations; they will still be submitting farm evaluations, preparing nitrogen management plans and— but these documents will simply be preparing with a different level of cost. If growers identify “outliers” in low vulnerability areas, these growers will still be subject to additional follow-up.

We also request that the MPEP program remain focused on high vulnerability areas. This program will be costly and it is critical that we focus on identifying management practices that are the most effective at improving water quality.

## 3. The Unique Circumstance of the Delta

The SJCDWQC coalition includes 240,000 acres of lands in the legal delta that are below sea level and experience artesian groundwater flow – meaning that groundwater flows up toward the ground surface rather than down from the ground surface to a groundwater basin. For this reason, it would be a waste of resources to monitor groundwater conditions in the Delta in the same manner as in other places in the coalition. Under the current program, the Delta is excluded from submitting Nitrogen summary reports and having their nitrogen management plans certified. We are concerned that the proposed order does not explicitly reserve this exclusion and would require our coalition to repeat work already done to achieve a similar exclusion in the future. To avoid this waste of resources, we request that the board amend the proposed WQ-Order on page

39 to expressly state that the SJCDWQC has already demonstrated to the Regional Board that nitrogen does not percolate below the root zone.

#### **4. Nitrogen - Groundwater Protection Targets**

Page 72 of the proposed order references a potential future program element that has been discussed between some agricultural coalition representatives and some environmental justice representatives - establishing groundwater protection targets. SJCDWQC has participated in those discussions and would like to see a compromise from the two groups become part of this order. Groundwater quality problems are complex, as we noted above. On-farm nitrogen information is only piece of the puzzle. We need to look at hydrology, hydrogeology and local conditions to understand the impact of nitrogen application on irrigated land to water quality. We have discussed a process to develop Groundwater Protection Targets that account for these varying conditions. Developing these targets will be very costly for the coalitions. We are continuing to work diligently with the environmental justice representatives to craft language that reflects our agreement to undertake this effort provided the high and low vulnerability distinctions in the program are preserved as well as an appropriate level of anonymity. However, we were unable to complete this process prior to the current comment deadline. We look forward to sharing the language with staff as early as possible after the first of the year. We have, however, included in Exhibits A and B redlined versions of relevant portions of Appendix B regarding the MPEP and Appendix B - MRP 1 regarding the GWMP, respectively, which show our suggested changes as well as the placeholders where we envision to insert the language we are negotiating.

#### **5. Surface Water Monitoring Program**

SJC&D strongly objects to any suggestion in the proposed order that the surface monitoring program should be modified. The existing program is working and is cost-effective for SJCDWQC and the Regional Board.

Given the differences among coalitions in hydrology, precipitation, and cropping, it is impossible for any Expert Panel to provide any greater specificity to surface water monitoring design than what is already available through the Monitoring Design Guidance for the Central Valley ILRP (October 2007). Each coalition, including the SJCDWQC has worked with the Regional Water Board to develop, modify, adapt, and optimize their individual surface water monitoring programs to ensure that the water quality data will allow a thorough evaluation of the questions below. An Expert Panel, no matter how accomplished in understanding monitoring design, will not be able to review each coalition's monitoring program in sufficient detail to understand the history, the rationale behind the decisions to include or exclude sites, constituents, and months, and how the programs have evolved over the 14 years of the ILRP. Consequently, an Expert Panel is likely to ignore or at best, gloss over the rich monitoring history and information available, and instead focus on the questions posed in the proposed order. As a result, they are

likely to develop an approach that has already been discussed, and in many instances, tried previously by several coalitions. The effort will be wasted and Coalitions will spend a considerable amount of effort and resources attempting to implement a program that will not provide any added value in addressing program needs.

The ILRP requires that the following six questions be answered through the coalition monitoring programs. These questions grew out of five similar questions developed in the Conditional Waiver MRP Order adopted in 2006.

1. Are receiving waters to which irrigated lands discharge meeting applicable water quality objectives and Basin Plan provisions?
2. Are irrigated agricultural operations causing or contributing to identified water quality problems?<sup>1</sup> If so, what are the specific factors or practices causing or contributing to the identified problems?
3. Are water quality conditions changing over time (e.g., degrading or improving as new management practices are implemented)?
4. Are irrigated agricultural operations of Members in compliance with the provisions of the Order?
5. Are implemented management practices effective in meeting applicable receiving water limitations?
6. Are the applicable surface water quality management plans effective in addressing identified water quality problems?

Each year in its Annual Monitoring Report (AMR), the SJCDWQC addresses these questions in detail utilizing results from its surface monitoring program. The surface water monitoring design is sufficient to provide the data and information necessary for the Regional Water Board's evaluation of each question. In addition, the programmatic questions listed above are consistent with the Nonpoint Source Policy and enables the Regional Water Board to determine and enforce compliance with receiving water limitations.

In the proposed order, three criticisms of the surface water monitoring program are raised (Page 59):

- Insufficient spatial density – not all monitoring locations are utilized;
- Insufficient temporal density – monthly sampling does not capture a sufficiently large sample of potential discharges; and
- Core sites are not representative of represented sites – monitoring results indicate that there are “mismatches” between core and represented sites.

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<sup>1</sup> Defined in Attachment E to the WDR as: “Exceedance of an applicable water quality objective or a trend of degradation that may threaten applicable Basin Plan beneficial uses.”

The proposed order states that the current Core-Represented Site monitoring program “may be effective in monitoring for a narrower set of purposes, such as determining the effectiveness of a certain set of management practices, but does not appear to be comprehensive enough to identify problem areas throughout the watershed. We recognize that water quality monitoring at core and represented sites is supplemented by additional, potentially upstream, monitoring under an SQMP, when triggered. But the problem is that a SQMP may not be triggered until an exceedance is detected at a core or represented site, and water quality exceedances upstream, or in adjacent portion of the watershed to that of the core and represented sites may go undetected in the interim.” (Page 59)

This language states that the ESJWQC surface water monitoring program is not sufficient to detect water quality problems (a water quality problem is defined in Attachment E of the Order). Proposing to convene an Expert Panel to review all ILEP monitoring programs and suggest modifications implies that all coalition monitoring programs are lacking. This conclusion is made without any understanding of the range of ILRP monitoring programs present across the Central Valley. Conditions in each coalition region dictate the type of monitoring program that can be implemented and all programs are customized those specific conditions. However, all of the different monitoring plans have been developed using the Monitoring Design Guidance for the Central Valley ILRP (October 2007). Guidance was provided to the Coalitions through a stakeholder process using technical expertise from across the State to help define what a sufficient monitoring program should be. Sufficient monitoring effort is the amount of sampling that allows the six questions in the Order to be adequately addressed.

The current surface monitoring design implemented by the Coalition effectively answers the six programmatic questions in addition to following the guidelines developed in 2007. Overall, the guidance document recommends that:

- Monitoring should be focused on decision making,
- Monitoring effort should reflect the potential for water quality impact with more monitoring allocation to situations where the potential impact is higher, and
- Monitoring should be adaptive where mid-course corrections occur based on monitoring results.

The Coalition’s monitoring program meets these recommendations and in combination with outreach efforts and an effective management plan approach, has resulted in significantly improved water quality. One of the criticisms of the ESJWQC monitoring program is that is inadequate due to a desire to keep costs of the monitoring program to a minimum. Recommending an Expert Panel to review all monitoring programs implies that this could be an issue with all coalition’s programs. It is an oversimplification of the history of the ILRP and the SJCDWQC monitoring program in particular, to suggest that the current SJCDWQC monitoring

program reflects a desire to keep monitoring costs to a minimum. The current SJCDWQC monitoring program is an iterative, adaptive program that includes a sufficient amount of monitoring to address the six questions in the Order. Combined with immediate notification to the Regional Water Board of any exceedances, quarterly data reporting for all water quality results, and an annual assessment of water quality results and management plan progress, the SJCDWQC monitoring and outreach program has been very successful. Of the 8274 management plans involving pesticides or toxicity, 50 of those plans have been completed and removed. The monitoring design has been refined over the years based on the history of monitoring results and an assessment of how to best answer the program questions in accordance with the 2007 Guidance Document. If the monitoring design was not adequately addressing the program questions, this would have been identified by Regional Water Board staff in comments to the Annual Monitoring Reports and additional monitoring would have been required.

## 6. Cost Control

Staff has estimated that the cost increases as a result of changes in the proposed order are about 10%. We strongly disagree. The costs associated with certification of low vulnerability nitrogen management plans alone would account for the 10%. Changes to the surface water monitoring program could double the cost of that program. Currently our Coalition spends approximately \$650,000 on the surface water monitoring program, which is about 30% of the total coalition annual budget, this is monitoring and lab analysis only and does not include the reporting to the regional or interpretation of the data.

If there are going to be changes to the current program that increase cost, we would prefer that the additional resources be focused on improving water quality. We have participated in the negotiations with the Environmental Justice interests and support the concept of having the coalitions undertake a more detailed analysis of what happens between application of nitrogen on the ground surface and groundwater quality. The proposed development of nitrogen groundwater quality protection targets would do this. We urge the board to remove the certification requirement for low vulnerability area growers plans in favor of adding language to the order related to the development of groundwater quality protection targets, and follow-up analysis and reporting relating to these targets.

## 7. Testing of Drinking Water Wells

The proposed order requires growers to perform water quality testing of “on-farm” drinking water wells. We continue to strongly object to including this requirement as part of this irrigated lands program – the requirement to monitor the quality of rural drinking water sources should be a state-wide program that is broader than irrigated lands and administered at a County health and safety level.

As drafted, the requirement to monitor wells is a grower requirement and does not require any action by the coalitions. We agree that if the requirement is included, the coalitions should not be involved in implementing or enforcing the requirement.

As drafted, the definition of “on farm” well is vague. The proposed order should be clarified to explain that growers do not have an obligation to test wells on lands that they do not own or control pursuant to a lease or operating agreement. Often a single Assessor’s Parcel Number may have both farmland and a rental home – which the grower only renting the farm portion of the parcel.

Thank you again for the opportunity to comment.



Michael Wackman  
Executive Director  
San Joaquin County and Delta Water Quality Coalition

Attachment B MRP Pages 17-19

**C. — Management Practice Evaluation Program**

The ~~goal of the~~ Management Practice Evaluation Program (MPEP) ~~shall initially focus on the determination of the crop-specific coefficients for conversion of yield to nitrogen removed and then on the determination of acceptable ranges for the multi-year A/R ratio target values by crop~~. Following the initial focus, the goal of the MPEP is ~~is~~ to evaluate the effectiveness, ~~if any~~ of irrigated agricultural ~~practices<sup>1</sup> practices<sup>11</sup> have~~ with regard to groundwater quality. ~~A MPEP may prioritize the condition relevantis required~~ in high vulnerability groundwater areas and must address the constituents of concern described in the GAR.— This section provides the goals, objectives, and minimum reporting requirements for the MPEP. As specified in section IV.~~DE~~ of this MRP, the third-party is required to develop a workplan that will describe the methods that will be utilized to achieve the MPEP requirements.

**Comment [JLS1]:** Important to Ag to focus on high vulnerability areas

4. **1. Objectives.** The objectives of the MPEP are to:

- Determine the crop-specific coefficients for conversion of a measured crop yield to nitrogen removed.
- Determine ~~acceptable agronomic~~ ranges for the multi-year A/R ratios by crop ~~and use the agronomic ranges to identify outliers in grower reported data for follow-up.~~
- Identify whether ~~existing site-specific and/or~~ commodity-specific management practices are protective of groundwater quality, ~~for the high vulnerability areas.~~
- Determine if newly implemented management practices are improving or may result in improving groundwater quality.
  - ~~Develop an estimate of the effect of Members' discharges of constituents of concern on groundwater quality.~~
- Identify ~~environmental conditions that may reduce the effectiveness of management practices.~~
- Utilize the results of evaluated management practices to improve the ~~practices~~ implemented on Member farms (~~i.e., those~~ not specifically evaluated, but having similar site conditions).

**Comment [JLS2]:** The A/R ranges will be a line of evidence, but whether a particular grower falls within or outside of the range is not determinative alone of whether their practices are "acceptable"

**Comment [J3]:** This is a GWMP issue

Given the wide range of management practices/commodities that are used within the third-party's boundaries, it is anticipated that the third-party will rank or prioritize its ~~high vulnerability~~ areas and commodities, and present a phased approach to implement the MPEP. ~~The Third Party may base such prioritization on high/low vulnerability distinctions.~~

**Comment [JLS4]:** Original language keeps emphasis on high vulnerability areas

**2. 2. Implementation.**— Since management practices evaluation may transcend watershed or third-party boundaries, this Order allows developing a MPEP on a watershed or regional basis that involves participants in other areas or third-party groups, provided the evaluation studies are conducted in a manner representative of areas to which it will be applied. The MPEP may be conducted in one of the following ways:

- By the third-party,

<sup>1</sup>~~In evaluating management practices, the third party is expected to focus on those practices that are most relevant to the Members' groundwater quality protection efforts.~~



- by watershed or commodity groups within an area with known groundwater impacts or vulnerability, or
- by watershed or commodity groups that wish to determine the effects of regional or commodity driven management practices.

A master schedule describing the rank or priority for the investigation(s) of the high vulnerability areas (or commodities within these areas) to be examined under the MPEP shall be prepared and submitted to the Executive Officer as detailed in the Management Practices Evaluation Program Workplan section IV. DE below.

~~3.1.~~ 3. *Report.*- Reports of the MPEP must be submitted to the Executive Officer as part of the third-party's Monitoring Report or in a separate report due on the same date as the Monitoring Report. -The report shall include all data<sup>2</sup> (including analytical reports) collected by each phase of the MPEP since the previous report was submitted. The report shall also contain a tabulated summary of data collected to date by the MPEP, including A/R and A-R data. The report shall summarize the activities conducted under the MPEP, and identify the number and location of installed monitoring wells relative to each other and other types of monitoring devices. -Within each report, the third-party shall evaluate the data and make a determination whether groundwater is being impacted by activities at farms being monitored by the MPEP.

— Each report shall also include an evaluation of whether the specific phase(s) of the Management Practices Evaluation Program is/are on schedule to provide the data needed to complete the Management Practices Evaluation Report (detailed below) by the required deadline. -If the evaluation concludes that information needed to complete the Management Practices Evaluation Report may not be available by the required deadline, the report shall include measures that will be taken to bring the program back on schedule.

4. *Management Practices Evaluation Report.* No later than six (6) years after implementation of each phase of the MPEP, the third-party shall submit a Management Practices Evaluation Report (MPER) identifying management practices that are protective of groundwater quality for the range of conditions found at farms covered by that phase of the study. The identification of management practices for the range of conditions must be of sufficient specificity to allow Members of the third-party and staff of the Central Valley Water Board to identify which practices at monitored farms are appropriate for farms with the same or similar range of site conditions, and generally where such farms may be located within the third-party area (e.g., the summary report may need to include maps that identify the types of management practices that should be implemented in certain areas based on specified site conditions). The MPER must include an adequate technical justification for the conclusions that incorporates available data and reasonable interpretations of geologic and engineering principles to identify management practices protective of groundwater quality.—

The report shall include an assessment of each management practice to determine which management practices are protective of groundwater quality. -If monitoring concludes that management practices currently in use are not protective of groundwater quality based upon information contained in the MPER, and therefore are not confirmed to be sufficient to ensure compliance with the groundwater receiving water limitations of the Order, the third-party in

<sup>2</sup> The data need not be associated with a specific parcel or Member.

conjunction with commodity groups and/or other experts (e.g., University of California Cooperative Extension, Natural Resources Conservation Service) shall propose and implement new/alternative management practices to be subsequently evaluated. Where applicable, existing GQMPs shall be updated by the third-party group to be consistent with the findings of the Management Practices Evaluation Report.

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**D. — Management Practices Evaluation Workplan**

The third-party, either solely or in conjunction with a Management Practices Evaluation Group (watershed or commodity based), shall prepare a Management Practices Evaluation Workplan. The workplan shall be submitted to the Executive Officer for review and approval. The workplan must identify a reasonable number of evaluation locations. ~~It must also throughout the high vulnerability groundwater area(s), and~~ encompass the range of management practices used, the major agricultural commodities, and site conditions under which these commodities are grown. The workplan shall be designed to meet the objectives and minimum requirements described in section IV.BC of this MRP.

1. — *Workplan approach.*— The workplan must include a scientifically sound approach to evaluating the effect of management practices on groundwater quality. The proposed approach may include:

- groundwater monitoring,
- tracking applied and removed nitrogen,
- modeling,
- vadose zone sampling, or
- other scientifically sound and technically justifiable methods for meeting the objectives of the Management Practices Evaluation Program.

Where readily available, ~~shallow~~<sup>3</sup>, sufficient groundwater monitoring data should be collected ~~to~~ available to confirm or validate the conclusions regarding the effect on groundwater quality of the evaluated practices. ~~on groundwater quality.~~ Any ~~shallow~~ groundwater quality monitoring that is part of the workplan must be of first encountered groundwater. Monitoring of ~~shallow~~ first encountered groundwater more readily allows identification of changes in groundwater quality from activities on the surface at the earliest possible time.

**Comment [JLS5]:** Use of term “shallow groundwater” appears incorrect here and contradicts the use of the term in other water quality regulatory contexts.

2. — *Groundwater quality monitoring –constituent selection.*— Where groundwater quality monitoring is proposed, the Management Practices Evaluation Workplan must identify:

- the constituents to be assessed, and
- the frequency of the data collection (e.g., groundwater quality or vadose zone monitoring; soil sampling) for each constituent.

<sup>3</sup> ~~Shallow~~ Readily available means that groundwater in this context refers to groundwater that is located less than 10 feet below the soil surface, which will exhibit a rapid response to deep percolation (below the root zone) water and nitrate flows.

The proposed constituents shall be selected based upon the information collected from the GAR and must be sufficient to determine if the management practices being evaluated are protective of groundwater quality. -At a minimum, the baseline constituents for any groundwater quality monitoring must include those parameters required under trend monitoring.

3. — *Workplan implementation and analysis.* - The proposed Management Practices Evaluation Workplan shall contain sufficient information/justification for the Executive Officer to evaluate the ability of the evaluation program to identify whether existing management practices in combination with site conditions, are protective of groundwater quality. -The workplan must explain how data collected at evaluated farms will be used to assess potential impacts to groundwater at represented farms that are not part of the Management Practices Evaluation Program's network. -This information is needed to demonstrate whether data collected will allow identification of management practices that are protective of water quality at Member farms, including represented farms (i.e., farms for which on-site evaluation of practices is not conducted).

4. — *Master workplan –prioritization.* -If the third-party chooses to rank or prioritize [its high vulnerability](#) areas/commodities in its GAR, a single Management Practices Evaluation Workplan may be prepared which includes a timeline describing the priority and schedule for each of the areas/commodities to be investigated and the submittal dates for addendums proposing the details of each area's investigation.

5. — *Installation of monitoring wells.* - Upon approval of the Management Practices Evaluation Workplan, the third-party shall prepare and submit a Monitoring Well Installation and Sampling Plan (MWISP), if applicable. -A description of the MWISP and its required elements/submittals are presented as Appendix MRP-2. The MWISP must be approved by the Executive Officer prior to the installation of the MWISP's associated monitoring wells.

**6. PLACEHOLDER FOR LANGUAGE RE PROCESS TO DEVELOP GROUNDWATER PROTECTION TARGETS/VALUES USING INFORMATION GATHERED AS PART OF MPEP**

### C. Management Plan Strategy

This section provides a discussion of the strategy to be used in the implementation of the management plan ~~and~~. The plan should ~~at a minimum,~~ include at least the following elements:

1. A description of the approach to be utilized by the management plan (e.g., multiple COC's addressed in a scheduled priority fashion, multiple areas covered by the plan with a single area chosen for initial study, or all areas addressed simultaneously [area wide]). Any prioritization included in the management plan must be consistent with the requirements in section XII of the Order, Time Schedule for Compliance.
2. The plan must include actions to meet the following goals and objectives:
  - a. Compliance with the Order's receiving water limitations (section III of the Order).
  - b. Educate Members about the sources of the water quality exceedances in order to promote prevention, protection, and remediation efforts that can maintain and improve water quality.
  - c. Identify, validate, and implement management practices to reduce loading of COC's to surface water or groundwater, as applicable, thereby improving water quality.
  - d. [PLACEHOLDER FOR POSSIBLE GROUNDWATER PROTECTION TARGET LANGUAGE]**
3. Identify the duties and responsibilities of the individuals or groups implementing the management plan. This section should include:
  - a. Identification of key individuals involved in major aspects of the project (e.g., project lead, data manager, sample collection lead, lead for stakeholder involvement, quality assurance manager).
  - b. Discussion of each individual's responsibilities.
  - c. An organizational chart with identified lines of authority.
4. Strategies to implement the management plan ~~tasks-actions~~.
  - a. Identify the entities or agencies that will be contacted to obtain data and assistance.
  - b. Identify management practices used to control sources of COCs from irrigated lands that are 1) technically feasible; 2) economically feasible; 3) proven to be effective at protecting water quality, and 4) will comply with sections III.A and B of the Order. ~~Practices~~**
  - c. Discuss (1) the management practices that growers will implement ~~must be discussed, along with an estimate of their; (2) the estimated~~ effectiveness or any known limitations on the effectiveness of the chosen practice(s); and (3) practices thought to be ineffective practices should also be discussed.** Practices identified may include those that are required by local, state, or federal law.- Where an identified constituent of concern is a pesticide that is subject to DPR's Groundwater Protection Program, the GQMP may refer to DPR's regulatory program for that pesticide and any requirements associated with the use of that pesticide provided that the requirement(s) are sufficient to meet water quality objectives.
  - e. d. Identify outreach that will be used to disseminate information to participating growers. This discussion shall include: the strategy for informing growers of the water quality problems that need to be addressed, method for disseminating information on relevant management practices to be implemented, and a description of how the effectiveness of the outreach efforts will be evaluated. The third-party may conduct outreach efforts or work with the assistance of the County Agricultural Commissioners, U.C. Cooperative Extension, Natural Resources Conservation Service, Resource Conservation District, California Department of Food and Agriculture, or other appropriate groups or agencies.**

- ~~d.~~ e. A specific schedule and milestones for the implementation of management practices and tasks outlined in the management plan. -Items to be included in the schedule include: time estimated to identify new management practices as necessary to meet the Order's surface and groundwater receiving water limitations (section III of the Order); a timetable for implementation of identified management practices (e.g., at least 25% of growers identified must implement management practices by year 1; at least 50% by year 2).

~~Establish measurable performance goals that are aligned with the elements of the management plan strategy. Performance goals include specific targets that identify the expected progress towards meeting a desired outcome.~~ **f. [PLACEHOLDER FOR POSSIBLE GROUNDWATER PROTECTION TARGET LANGUAGE]**

## D. Monitoring Methods

### 1. General Requirements

The monitoring system must be designed to measure effectiveness at achieving the goals and objectives of the SQMP or GQMP and capable of determining whether management practice changes made in response to the management plan are effective and can comply with the terms of the Order.

Management practice-specific or commodity-specific field studies may be used to approximate the contribution of irrigated lands operations. Where the third-party determines that field studies are appropriate or the Executive Officer requires a technical report under CWC 13267 for a field study, the third-party must identify a reasonable number and variety of field study sites that are representative of the particular management practice being evaluated.

### 2. Surface Water – Additional Requirements

The strategy to be used in the development and implementation of the monitoring methods for surface water should address the general requirements and, at a minimum, include the following elements:

- a. The location(s) of the monitoring site and schedule (including frequencies) for monitoring should be chosen to be representative of the COC discharge to the watershed.
- b. Surface water monitoring data must be submitted electronically per the requirements given in section III.D of the MRP.

### 3. Groundwater – Additional Requirements

The third-party's Management Practice Evaluation Program and Groundwater Quality Trend Monitoring shall be evaluated to determine whether additional monitoring is needed in conjunction with the proposed management strategy(ies) to evaluate the effectiveness of the strategy(ies). This may include commodity-based representative monitoring that is conducted to determine the effectiveness of management practices implemented under the GQMP. Refer to section IV of the MRP for groundwater monitoring requirements.

## B. E. Data Evaluation

Methods to be used to evaluate the data generated by SQMP/GQMP monitoring and to evaluate the effectiveness of the implemented management practices must be described. -The discussion should include at ~~a minimum, least~~ the following:

1. Methods to be utilized to perform data analysis (graphical, statistics, modeling, index computation, or some combination thereof).
2. Identify the information necessary to quantify program effectiveness going forward, including the tracking of management practice implementation<sup>1</sup> and A/R<sub>3 year</sub> ratio results where appropriate. The approach for determining the effectiveness of the management practices implemented must be described and when appropriate related to changes in A/R<sub>3 year</sub> results. Acceptable approaches include field studies of management practices at representative sites and modeling or assessment to associate the degree of management practice implementation to changes in water quality. -The process for tracking implementation of management practices and A/R<sub>3 year</sub> ratio results must also be described. The process must include a description of how the information from the Farm Evaluation, Management Practice Implementation Report (MPIR), and INMP Summary Report is/will be collected from growers, the type of information being collected, how the information will be verified, and how the information will be reported.

### 3. [PLACEHOLDER FOR POSSIBLE GROUNDWATER PROTECTION TARGET LANGUAGE]

#### **G. F. Records and Reporting**

By 1 May of each year, the third-party must prepare a Management Plan Progress Report that summarizes the progress in implementing management plans. -The Management Plan Progress Report must summarize the progress for the hydrologic water year.<sup>4, 2</sup> - The Management Plan Progress Report shall include the following components:

- (1) Title page
- (2) Table of contents
- (3) Executive Summary
- (4) Location map(s) and a brief summary of management plans covered by the report
- (5) Updated table that tallies all exceedances for the management plans
- (6) A list of new management plans triggered since the previous report
- (7) Status update on preparation of new management plans
- (8) A summary of management plan grower outreach conducted
- (9) A summary of the degree of implementation of management practices by growers in the management plan area
- ~~(8)~~ (10) A summary and assessment of management plan monitoring data collected during the reporting period including a list of management practices **recommended found effective for improving water quality under particular circumstances**
- ~~(9)~~(1) A summary of management plan grower outreach conducted
- ~~(10)~~(1) A summary of the degree of implementation of management practices by growers within the management plan area

<sup>1</sup> A hydrologic water year is defined as 1 October through 30 September.

- ~~(11)~~ (11) Results from evaluation of management practice effectiveness, including the ~~AVR<sub>3-year</sub> ratio when evaluating a GQMP~~
- ~~(12)~~ (12) An evaluation of progress in meeting performance goals and schedules, including **[PLACEHOLDER FOR GROUNDWATER PROTECTION TARGET LANGUAGE]**
- ~~(13)~~ (13) Any recommendations for changes to the management plan

Pursuant to Section VII.G of the Order, the third-party must additionally require submission of a Management Practice Implementation Report (MPIR) by members according to a schedule to be specified by the third-party for each SQMP or GQMP and approved by the Executive Officer.