

# Central Coast Water Quality Preservation, Inc.

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January 3, 2011

Mr. Jeffrey S. Young  
Board Chair  
California Regional Water Quality Control Board  
Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, California 93401

Re: Draft Monitoring and Reporting Program, Order No. R3-2011-0006

Dear Chairman Young,

The purpose of this letter is to provide comments on the CCRWQCB Staff Draft Monitoring and Reporting Program, Order No. R3-2011-0006 (“Draft MRP”). These comments are provided from the perspective of my current position as Technical Program Manager of the Cooperative Monitoring Program, where I am responsible for technical and logistical implementation of the cooperative water quality monitoring which fulfills receiving water monitoring requirements for irrigated agricultural dischargers under the current Ag Waiver. The comments are enumerated 1 through 12, as follows:

- 1) Related to receiving water storm event monitoring described on Page 5 and in Table 2 of the Draft MRP, it is unclear if the 2 storm events required to be monitored can also serve as the monthly monitoring events for the months in which they occur, or if these are required over and above the 12 monthly monitoring events (for a total of 14 events per year). The latter case would be a departure from the current protocol, in which all monitoring events are scheduled for the last week of the month, with the first two storm events of each calendar year moved as needed to capture storm conditions. These events also serve to meet the monitoring requirement for the months in which they occur (i.e. if monitoring occurs during the second week in January due to a storm, no additional monitoring is required in January).
  - a. A recommendation is to maintain the current protocol, with the possible exception of adopting the Draft MRP suggestion that one storm monitoring event capture the “first run-off event that results in significant increase in stream flow.” This would improve the CMP’s current approach to storm monitoring, however it would be a departure from the present timing of these events (which typically occur in January, February, or March), potentially interfering with trend detection. The pros and cons of this approach should be discussed in a dialogue between the CCRWQCB’s CCAMP staff and CMP staff and technical contractors.



- 2) Tables 4a and 4b, as well as some text, allow for “EPA approved ‘quick test strip’ methods” and “hand-held water quality meters” to be used in lieu of laboratory analysis in some cases. This language could cause some confusion, as EPA-approved test strips do not exist for most parameters (i.e. those test strips that do exist are not of sufficient accuracy/precision to meet EPA specifications), and some EPA-approved hand-held water quality meters are quite expensive and so would not offer any economic benefits over laboratory analysis. One of the following modifications is recommended:
  - a. Remove specific references to “test strips” and “hand-held water quality meters” and replace with, “In-field water testing instruments/equipment may be substituted for laboratory analysis if the method is approved by EPA, meets RL/PQL specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met.” OR
  - b. Relax QA/QC requirements for individual monitoring such that methods not approved by the EPA can be used when they are sufficient to identify non-compliance with Water Quality Objectives. For example, a nitrate test strip is not approved by the EPA and cannot be used to quantitatively distinguish between nitrates at 8 mg/L (NO<sub>3</sub>-N) versus 11 mg/L. However, a nitrate test strip that turns bright pink immediately upon immersion in sample water indicates a clear and severe exceedence, without additional laboratory analysis. Similar techniques/logic apply to turbidity and flow, and would result in cost savings.
  
- 3) In-text and table requirements for “flow” monitoring should provide additional specificity in cases where high accuracy/precision is desired. The term “field measure” could imply a variety of techniques, from “bucket and stopwatch” to “orange peel” to the more highly-involved transect and velocimeter protocol currently used by the CMP. Costs of these different techniques vary considerably, so additional specificity in flow monitoring requirements has significant cost implications.
  
- 4) Additional specificity/rationale for language about “restoring groundwater quality in the upper-most aquifer” (e.g. Page 9, Part III.A.9) would be helpful; it is unclear why these areas are of special interest. For example, many surface water nitrate impairments are derived from wells pumping from areas below and isolated from the “upper-most aquifer.” These cross-sections recharge from up-gradient, unconfined areas of the basin. Continued surface water (and upper-aquifer) impairments could be anticipated if these lower-aquifer areas do not improve, however language in the Draft MRP specifies the “upper-most aquifer” as the area of interest.
  
- 5) Page 9, Part IV.A.1.d calls for a receiving water MRP to accomplish “Identification of Beneficial Uses and applicable water quality standards” within 3 months of adoption of the Order. This task is recommended as being better accomplished by CCRWQCB staff because it requires interpretation of the Basin Plan. In past monitoring reports, CMP staff have attempted this task in order to provide analysis of water quality exceedences at CMP sites. The task proved quite difficult, as:
  - a. Not all water bodies are listed in the Basin Plan;

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- b. Not all Water Quality Objectives (including some numeric objectives) provide clearly-interpretible water quality standards for all Beneficial Uses;
- c. It is not always clear which Beneficial Use (and thus water quality objective) applies to a water body (for example, COLD versus WARM for water bodies not designated with specific Beneficial Uses but needing to be “fishable”); and
- d. Some water bodies are exempted from Beneficial Use designations (and thus water quality standards), however it is not always clear from the Basin Plan how to apply these exemptions.

It seems more appropriately the role of the regulatory agency to provide these standards to the discharger. Then the CMP or individual dischargers can use the standards with clarity as to what does or does not constitute an exceedence for specific sites/parameters.

- 6) Page 10, part IV.C.1 calls for submittal of water quality monitoring data within the next business day following identification of water quality exceedences, which is to occur within 5 business days after receiving laboratory analytical reports. For several reasons, I am concerned that this short turnaround time (TOT) exceedence report will not be a useful feature of an agricultural water quality regulation, but will result in increased costs and labor nonetheless:
- a. Even with the “5 days after lab reporting” and “next business day” requirements, these reports would likely take 21-30 days from the date of sampling to reach the CCRWQCB, which means that even a rapid response by your staff would be pretty far removed from any incident causing an exceedence;
  - b. Exceedences identified by the CMP occur in ambient waters and are not traceable to a single source, so even a geographically-focused response by your staff would be unlikely to identify a specific cause for an exceedence occurring almost a month prior, and also unlikely to specify a corrective action sure to correct the problem;
  - c. Exceedences identified by the CMP typically follow a regular pattern, which means that monthly reports would rarely provide new information to your staff;
  - d. Exceedences identified by the CMP are generally the result of ongoing conditions/practices rather than “incidents,” so having new results faster usually won’t alert your staff to anything out of the ordinary;
  - e. In contrast to exceedence reporting in other discharge scenarios (for example, temperature exceedences on rivers dammed by hydroelectric facilities), the CMP generates reports of hundreds, maybe thousands of exceedences each year [50(sites)x12(months)xZ(parameters), where Z is 1 or more parameters in exceedence per site]. Your staff already has nearly 6 years worth of this type of data, almost all of it redundant from month to month, year to year... It seems an unwieldy undertaking to now attempt to respond more rapidly to even a subset of the exceedences.

I understand that there is a regulatory precedence for this type of reporting, however I’m not clear on how the CMP fits into this model. If there were some specific sites or parameters that were of special interest during a limited period of time, I think we could coordinate some very rapid TOT’s (i.e. less than 1 week from the time of sampling). But to sustain this type of reporting for downstream locations over



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the entire region, every month, for every parameter does not seem an efficient use of resources given the redundancy and long history of most exceedences, not to mention ambiguity of specific sources.

- 7) On Page 11, part IV.E.1.m, the annual receiving water quality monitoring report is required to include recommendation of candidate sites for Toxicity Identification Evaluations (TIEs). While TIEs offer a rigorous experimental approach to identifying toxicants responsible for effects to laboratory test organisms, existing data (as well as published TIE studies themselves) suggest that these are not always necessary to resolve a large number of questions about aquatic toxicity. A slightly simpler approach is to perform toxicity tests concurrent with laboratory analysis for all potential toxicant classes. Data are then analyzed to determine which toxicants are present at levels that could explain observed toxicity. This type of analysis is an important part of the TIE approach, however TIEs go on (at great expense) to manipulate sample water experimentally to actually test hypothesis(es) about which toxicant(s) is/are responsible for the observed effects to the test organisms. In many cases, sufficient clarity about sources of toxicity can be gained without incorporating the additional layer of experimentation that results in the high cost of the TIE.
  - a. The recommendation in this case would be to modify requirement IV.E.1.m to require evaluation of candidate sites for “concurrent toxicity and chemical analyses,” rather than TIEs. In cases where toxicity remains unresolved even after all potential toxicant classes have been analyzed, or where toxicity continues despite improvements in specific toxicant levels, then the more sophisticated and costly TIE approach is justified.
  
- 8) On Page 7, part II.A.1 (photo monitoring required within one year of adoption of the Order) and also on Page 16, part VI.F.1 (water quality buffer plan required within four years of adoption of the Order), filter strips are prescribed as a management practice to mitigate impairments related to temperature, turbidity or sediment, in accordance with Basin Plan requirement Ch.5 p. V-13 Section V.G.4. Of particular interest seems to be the width of the strip from the top of the bank, and a main goal of these buffers is listed in the Draft MRP as “to prevent waste discharge.”
  - a. With respect to temperature-related impairments, the expected relationship between filter strip width and benefits to stream temperature is unclear. The measurable parameter that could be anticipated to influence stream temperature is “% Shading,” which depends on a combination of riparian vegetation height, the proximity of this vegetation to the stream bank, and to a minor degree the height and % slope of the area between the wetted stream edge and the start of riparian vegetation. None of these factors is directly related to riparian filter/buffer width from the top of the stream bank, which appears to be the focus of requirements in the Draft MRP.
  - b. With respect to the stated purpose to “prevent waste discharge,” (presumably of turbidity/sediment), I do not believe the prescribed management practice will result in measurable changes to water quality for two reasons:
    - i. Where the sediment “discharge” originates as erosion of a poorly vegetated stream bank (i.e. the region above the wetted stream edge and below the top of the bank or “bank full” level), the prescribed buffers will not prevent erosion because the area of



interest as described in the Draft MRP begins at the top of the bank, not the wetted edge.

- ii. Where the sediment “discharge” originates from agricultural activities beyond (upland of) the top of the bank, the prescribed buffers will not prevent discharges of sediment because such discharges are most typically channelized by design and do not contact riparian areas for appreciable lengths of time, if at all. Some benefit may be expected in isolated cases where “sheet flow” runoff from storm events becomes quantitatively important in relation to channelized flows (which occur by design in storm events as well), however Cooperative Monitoring data from 2005 through 2010 show that sediment/turbidity-related impairments are severe during all 12 months of the year. Since only 2 of the 12 CMP monitoring events each year typically include storm event data, and only a subset of locations would be measurably influenced by the filter strip/buffer management practice, it is unlikely that these requirements will result in detectable trends in sediment/turbidity-related impairments.

I am aware of the large body of literature and research which touts riparian buffers and filter strips as successful management practices. This comment can be summarized that as currently described, I do not believe this feature will result in measurable changes to water quality (i.e. CMP data) because this practice does not address the current root cause of the impairments.

- 9) On Page 19, Table 2 calls for photographs of monitoring locations. This should be revised to specify “upstream and downstream photographs.”
- 10) On Page 19, Table 2 calls for monitoring of a large suite of parameters not currently monitored by the CMP. In general, it is recommended that a specific rationale be provided any time a monitoring parameter is recommended for addition or deletion from the program. The relationship between some of these parameters and agricultural discharges is not clear; a clear relationship is needed if the monitoring is to meet program objectives. It is also general scientific protocol to choose monitoring parameters to meet program objectives, so it should be possible to state how each parameter supports the objectives. In particular:
  - a. In combination with the inorganic forms of nitrogen already monitored, the addition of TKN allows calculation of organic nitrogen. This could also be accomplished with “Total Nitrogen” analysis. Flexibility should be allowed to substitute this parameter if more cost effective.
  - b. Including Total Phosphorus and Total Nitrogen (or TKN) will provide data on organic forms of N and P generally expected to be of minor importance in relation to the elevated inorganic forms which result from agricultural activity. The benefit of adding these parameters, especially to the routine monthly program, is unclear.
  - c. Algae-related parameters should be modified to reflect the importance of attached algae in riverine environments.
  - d. It is unclear why Hardness and TOC are of interest as monthly parameters (i.e. why not just when monitoring for metals is required).

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- e. Rationale/citations should be provided for Pathogens and Metals, as there is question as to whether or not each of the listed parameters is actually related to irrigated agricultural discharges (or pesticide applications). (Rationale is clear for some; not for others.)
  - f. Rationale/citation should be provided for Phenol as a parameter, with special consideration as to the form it would be expected to take in receiving waters (i.e. is "Phenol" the correct analyte name?).
  - g. Is the current annual requirement for "Bioassessment Monitoring," which includes Physical Habitat Assessment and Benthic Invertebrate Assessment being revised to a one-time requirement for Benthic Invertebrate Assessment only? Please clarify.
- 11) On Page 19, Table 2 specifies reporting limits for some pesticides that appear higher than levels of concern currently specified by CCRWQCB staff. To support detection of exceedences, MDL's and RL's should be lower than water quality objectives.
- 12) On Page 19, Table 1 specifies major water bodies for monitoring. There are several inconsistencies with the current suite of CMP sites, including:
- a. No mention of San Juan Creek or Carnadero Creek in the Upper Pajaro; Alisal Slough in the Lower Salinas; the Salinas River above Chualar; Green Valley or Bradley Channel in Santa Maria.
  - b. New water body San Luis Obispo Creek
- A rationale for any changes to the current suite of CMP sites should be provided.

Thank you for considering these comments.

Sincerely,

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