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Via Electronic Mail

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
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SUBJECT: Comments on SWRCB Review of Waste Discharge Requirements General Order No. R5-2012-0116 for Growers Within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group

Dear Ms. Townsend,

Central Coast Water Quality Preservation, Inc. (CCWQP) manages the surface water Cooperative Monitoring Program (CMP) for growers enrolled in the Central Coast Regional Water Quality Control Board's (CCRWQCB) Irrigated Lands Program. This letter is to express concerns with findings regarding surface receiving water monitoring in the SWRCB's review/revision of the Waste Discharge Requirements General Order No. R5-2012-0116 for Growers Within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group (hereinafter "Draft ESJ Order").

First, it is important to note that the ***monitoring design*** of the Central Coast's CMP ***differs*** from that of the East San Joaquin Coalition's surface water program (ESJ program). It is not appropriate to extrapolate concerns about the ESJ program to the Central Coast's CMP, nor will it be appropriate to project findings from a future expert review of the ESJ program onto the Central Coast's CMP. Beyond asserting that the spatial and temporal resolution of the Central Coast CMP is sufficient to achieve the necessary regulatory objectives, statements in this letter are not intended as commentary on the ESJ program design and I would discourage comparison due to the large differences in cropping systems and ecology between the two regions.

One strength of the Central Coast's CMP is a relatively high sampling frequency, i.e. monthly for routine parameters, quarterly for aquatic toxicity, twice annually for sediment toxicity, and periodically for specific toxicants (pesticides, herbicides, etc) to aid in interpreting aquatic toxicity results. This sampling frequency has proven more than adequate to document on-going water quality issues in Central Coast agricultural watersheds (which tend to be chronic rather than sporadic in nature) and to detect statistically significant changes in water quality over time (i.e. trends). Further validation comes from the CMP's statistical power analyses (CCWQP 2010); sampling frequency analysis conducted by UC scientists (Los Huertos et al. 2001); and the design of the Central Coast RWQCB's own ambient monitoring program (CCAMP 1998). A second strength of the Central Coast's CMP is the relatively high spatial resolution of monitoring sites. The program monitors over 50 points in the lower and middle reaches of watersheds, reflecting both high and

moderate intensities of agricultural land use. Even higher spatial resolution was achieved during a follow-up "upstream monitoring" study which monitored 33 additional ambient sites upstream of 17 routine CMP monitoring sites, monthly for a full year. The study included a "source area analysis" which a) identified and characterized sub-watershed source areas for water quality impairments observed at core monitoring sites; b) identified some sub-watershed areas that did *not* contribute to downstream impairments; c) differentiated areas contributing to concentration-based versus load-based water quality concerns; and d) in some cases showed the relative importance of agricultural versus urban sources of impairment (CCWQP 2010). Between our core sites and the supplemental upstream monitoring sites, the CMP's spatial resolution has proven sufficient to both characterize water quality impairments in agricultural areas of the Central Coast, and to identify source areas for impairments. When coupled with appropriate outreach to growers, these are sufficiently fine spatial scales to inform management practice implementation and evaluate its effectiveness.

I agree strongly with the Agricultural Expert Panel statement cited in the original ESJ Order that "monitoring of surface water discharges from individual fields or farms is costly and complicated, as well as subject to serious challenges in identifying the appropriate timing for periodic sampling and coordinating with shifting field crew operations, pesticide applications, and sediment runoff events, and with schedules for lab operations." Based on a decade of experience monitoring water quality in agricultural watersheds at a variety of spatial scales, I believe appropriate and informed edge-of-field sampling is a critical management tool for growers, but is completely fraught as a blanket requirement for region-wide regulatory programs.

I strongly disagree with the project proposal stated in the Draft ESJ Order to "convene a panel of experts to make recommendations on a framework for surface receiving water monitoring to inform irrigated lands programs statewide." In 2014 an "Agricultural Expert Panel" was convened to answer specific questions regarding the leaching of nitrate to groundwater. While that panel addressed important information gaps on groundwater nitrate issues, it does not necessarily follow that an additional "panel process" will be similarly useful for surface water. Surface water issues are less complex, easier to measure, more widely studied, and better understood. Surface impairments are easier to trace back to one or a few sources than is nitrate in a groundwater basin. Furthermore, much of the subject matter proposed for expert panel consideration, one would hope, should fall within the professional skill sets of the Water Boards' existing staff base.

Regarding the 7 bullet points on page 61 of the redline Draft ESJ Order:

1) Assuming the first bullet point refers to ***water quality*** management, then determining the management decisions that need to be answered by monitoring and data assessment is a duty of the Water Boards, and should fall within their staffs' existing scopes of work. An independent panel of experts should not be needed to designate these, and it is somewhat surprising to learn that there are significant questions on this topic given that the irrigated lands regulatory process began well over a decade ago.
2) Designing a monitoring program to provide defensible data while controlling costs is important but a formal statewide Expert Panel process is not warranted to address it. The program staff from multiple stakeholder groups already involved in the irrigated lands regulatory process are best equipped to answer this question, based on their understanding of the specific nuances and challenges already encountered.
3) Periodic evaluation of monitoring program effectiveness is important, however this should not require a formal statewide Expert Panel process either. First, this sounds like another duty that should fall within the existing scopes of work of the Water Boards' Staff. Second, agricultural stakeholders have a cost incentive to ensure monitoring programs are effective. The Central Coast CMP completed a program

review in 2010 (CCWQP 2010), and I expect to complete another round of formal program evaluation in the next 1-2 years in preparation for the CCRWQCB's Ag Order 4.0. It is also my understanding that the CCRWQCB staff are currently involved in an intense effort to evaluate many aspects of their current irrigated lands program and that this either already includes or soon will include an evaluation of the CMP. This topic is best addressed by, and should already fall within the existing scope of duties of the program staff from multiple involved stakeholder groups.

4) I support the desire expressed here to incorporate new monitoring and assessment tools relevant to the irrigated lands program, however I disagree that convening a statewide Expert Panel is a good way to address this need. I think there are more appropriate ways to update skills, tools and knowledge, and furthermore would not necessarily expect the "experts" selected based on the stated criteria (p. 62 of Draft ESJ Order) for this panel to be the best source of such information.
5) I think the State and Regional Water Quality Control Boards themselves, as well as other stakeholder groups already involved in the process, are best equipped to address this question.
6) I think the State and Regional Water Quality Control Board Staff, together with those who currently submit data on behalf of dischargers, and with CEDEN staff/contractors are the best (and indeed the *only*) people equipped to address this question. None of the stated criteria for expert selection appear to select for qualifications on this topic.
7) This is a nice academic question, however I think extrapolation to other kinds of dischargers and programs will be inappropriate in many cases, and even harmful or misleading in some. While interesting, this question is irrelevant to the irrigated lands programs themselves and not a good use of public resources.

Regarding the 4 bullet points on page 62 of the redline Draft ESJ Order:

1) I *could not disagree more* with a landscape-based modeling approach to surface water monitoring for the purpose of the irrigated lands programs. The assumptions inherent in modeling simply do not bear out over the complex and engineered hydrologies and topographies of California agricultural landscapes, nor over the complexities of California crop production systems. The available GIS layers for water bodies and watershed boundary delineation (i.e. topography) are far too inaccurate, and the amount of ground-truthing needed to correct them far offsets any savings in cost or effort that would be gained by modeling. This is just one example; predictive modeling of BMP effectiveness is even more fraught. A modeling approach to surface water for irrigated lands is *not in the interest of water quality*. I urge you to continue the current, direct measurement approach and steer away from modeling.
2) Any qualified agronomist would also need a *production* background, as the science of agronomy *as applied in California production systems* is vastly different from academic agronomy. Furthermore, no single or even two or three agronomists will have sufficient depth of expertise in the multiple areas listed.
3) Data science and statistics is an important topic, and I support the idea of peer review of irrigated lands monitoring programs in this regard, though I do not feel a statewide expert panel process is warranted to accomplish it.

4) I also support the idea of consulting expertise on questions regarding analytical methods (particularly toxicity testing) and fate and transport, but do not feel a statewide expert panel process is warranted to accomplish it. Further, it should be noted that water bodies within California agricultural landscapes are not "typical receiving waters of California." They are highly unique in terms of hydrology, physical modification and pollutant mixes and concentration. Expertise regarding typical California water bodies, absent further education of the "expert," will not be relevant to California ***agricultural*** receiving waters.

Should a Surface Water Expert Panel be convened notwithstanding, I strongly discourage the extrapolation of any findings from a review of the ESJ program to the Central Coast. Differences between the cropping systems, pollutant fate and transport, hydrology, ecosystems, and existing monitoring programs are simply too great. Additionally, due to the presence of the Monterey Bay National Marine Sanctuary and multiple academic institutions, the Central Coast is home to a high-density and diverse consortium of scientists. With our nationally- and in some cases globally-recognized scientific community, the Central Coast is well equipped to conduct its own locally-informed program review should that be deemed necessary.

In closing, I cannot stress enough the importance of a "boots on the ground" working knowledge of these watersheds for digesting submitted surface water monitoring data. Absent this familiarity no amount of data and no level of sophistication in the monitoring design will suffice, regulatory staff will be dissatisfied with their ability to interpret monitoring results for management purposes, communication to the public (and to environmental stakeholders in particular) will be confusing, and dischargers will face an endless cycle of escalating monitoring requirements. It is incumbent on regulatory staff to dig into the data, supplement it with in-the-field knowledge as needed, and put the information to good use. The agricultural discharger groups have this knowledge. Some of the environmental stakeholder groups have it. The Central Coast RWQCB's staff base includes personnel with this knowledge, as I suspect do other RWQCB's. It is incumbent on the Water Boards to task appropriate staff with interpretation of submitted data. Tools such as field trips, workshops and symposiums should be utilized to ensure that the data from existing monitoring programs are being fully utilized before using public resources to undertake a formal expert panel process, and certainly before further escalating monitoring requirements for any discharger group. In particular, joint fact-finding between stakeholders has been shown to increase buy-in to the policy process (Leach and Sabatier 2005). I recommend the Draft ESJ Order language be changed to reflect that a Surface Water Expert Panel is not necessary for the State Board's review.

Thank you for considering these comments.

Sincerely,

Sarah Lopez
Technical Program Manager

References

(CCAMP) Central Coast Ambient Monitoring Program (1998), Available at http://www.ccamp.org/ca/3/305/305.html.

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