

# LATE COMMENT

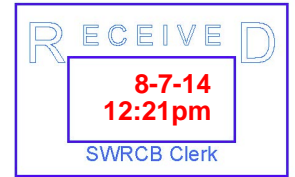
In Response to:

Recommendations to the State Water Resources Control Board

Pertaining to the Irrigated Lands Regulatory Program:

Conclusions of the Agricultural Expert Panel

(July 2014 Draft for Public Comment)



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## Introduction

This response is intended to suggest amendments or alternatives to the recommendations of the Agricultural Expert Panel (hereafter “the Panel”). This response focuses on issues related to monitoring. Generally, the Panel recommends decoupling monitoring actions from regulatory actions. That recommendation has the unintentional consequence of removing one of the drivers for monitoring and, thus, devalues monitoring. Although it may be sensible to decouple routine monitoring from regulatory events, making fewer measurements (less monitoring) will make it more difficult to track the movement of nitrates (for example) from field to watershed and, thus, more difficult to protect the watersheds and other shared water resources. Information gained from monitoring is a tool which is necessary to protect public and private interests in shared water sources. Reducing the drivers for monitoring may reduce availability of this information and, thus, reduces the effectiveness of this tool.

This response does *not* argue that monitoring should necessarily effect regulation. Instead, it seeks to ensure that the removing of regulatory aspects of monitoring does not lead to reduction in the number or quality of monitoring events.

## Comments on Expert Panel Recommendations.

1) Page 21. *"The Panel does not believe that extensive monitoring of "first encountered groundwater" for nitrate is appropriate because of all of the uncertainties involved in interpreting results."*

I disagree. In general, having more data facilitates interpretation. In particular, spatial and temporal correlations such as those referred to in this report become more reliable as the frequency of data collection is increased. More extensive monitoring should be expected to improve the reliability of results, especially when studying phenomena which involve (as the Panel points out) occasional large variations. Certainly, less monitoring will reduce the quality of the results.

2) Page 32. *"However, measuring groundwater was deemed unreliable, because the source of the nitrates cannot be pinpointed."*

The wording here is vague. It is not clear whether (1) groundwater measurement was deemed unreliable by *this panel* or whether (2) it was previously deemed unreliable.

Regardless, the following clarification applies: Measurements are unreliable when the results themselves are suspect. Measurements *not necessarily unreliable* when the conclusions based on those measurement results are unreliable. In this case, not knowing the origin of the nitrate does not necessarily implicate the reliability of the nitrate measurements. In fact, it implicates the models describing the relationship between the source(s) of nitrate and the local groundwater concentrations. Difficulties involved in identifying the sources of nitrates in groundwater were stated multiple times by the Panel. It is crucial to note that we are only aware of the complexity of tracking nitrate migration *because* we are able to make reliable measurements of nitrate.

I would like to emphasize the statement by the panel (page 32) that knowledge of current groundwater conditions could likely serve to aid the grower in evaluating and executing the proposed nutrient management plans. Possibly more importantly, records of groundwater measurements could serve to protect the grower against punitive or inconvenient actions which could occur as a result of (for example) findings of high nitrate in nearby watersheds. For these reasons, measurement of local groundwater on farms is recommended.

3) Page 35. *"The recommendation is to take sufficient samples in the watershed streams to detect if problems do exist. [...] When/if problems are identified, sampling should move upstream with sampling to locate the source of the problem."*

I strongly disagree with this recommendation. The disadvantage of measuring watersheds exclusively is: When a problem is identified, the watershed has already been negatively impacted and growers will then (correctly) associate discharge monitoring and/or related "sampling to locate the source of the problem" with negative circumstances. Consequently, growers may be reluctant to comply with activities that may implicate them. (This reluctance of growers to comply with potentially-self-implicating processes was emphasized several times by the Panel). In other words: When investigators attempt discharge monitoring in order to locate "serious contributors", growers will be reluctant to comply with discharge monitoring for fear of being implicated as a serious contributor. If compliance is low, the source of the problem may be practically impossible to identify because information will be missing or of low quality.

On the other hand, if discharge is sampled frequently when compliance is high, then investigators would already have necessary information before concerned growers have a chance to withdraw compliance. Investigators would need only to review the data in order to locate the source.

Thus, it makes more sense to combine routine monitoring of discharge points with other watershed monitoring.