



State Water Resources Control Board

August 7, 2014



Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
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Sacramento, CA 95814

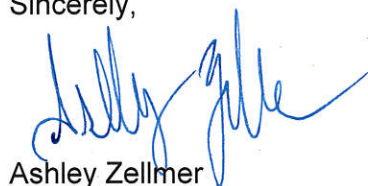
Dear Agricultural Expert Panel Members:

We, the State Water Board staff, would first like to thank all the members of the expert panel for agreeing to lend their expert knowledge and experience to this very important topic. The dedication of your time to serve on this panel is greatly appreciated.

With the understanding that the draft report is a work in progress, we have reviewed it with an eye towards clarity and understanding, and so our comments should be viewed as an aid to the panel to achieve this rather than a challenge to any specific point the panel is making. We have divided our comments into two parts: *Part I: State Water Board Staff Comments* which are directed toward the substance and meaning of the panel's report, and *Part II: State Water Board Staff Editorial Recommendations* which concern typos, grammar and wording suggestions.

Thank you again for your effort and commitment to this topic. We are, of course, available to further clarify our comments and suggestions as needed at the panel's next meeting.

Sincerely,



Ashley Zellmer
Water Resource Control Engineer
State Water Resources Control Board

Part I: State Water Board Staff Comments on *Conclusion of the Agricultural Expert Panel, Recommendations to the State Water Resources Control Board pertaining to the Irrigated Lands Regulatory Program*

Programmatic Recommendations from the Agricultural Expert Panel (Page ii)

The first sentence of this section describes that the panel recommends a paradigm shift. The term 'paradigm shift' seems to convey a complete change in approach from that which has been taken to date. Is the panel suggesting something more along the lines of a 'shift in emphasis' (i.e. from monitoring and reporting to implementation of better management practices and an education requirement)? The current regulatory programs do contain the suggested components to varying degrees, so it may be that the panel is suggesting certain elements be emphasized over others. If so, it is requested that the panel please clarify.

Recommendation 2: This recommendation seems to be missing the time component associated with the reporting elements mentioned. The panel discussed what should be reported with emphasis on the fact that these reported elements would not be useful on an annual basis. Later in the report multi-year trend analysis is discussed, however that is not reflected here.

Recommendation 3: This seems like more of a reporting detail of item 2 rather than a stand-alone item.

General Understanding by the Panel (Pages ii & iii)

Point 1: It is recommended to provide further details or an example to add more context to the point being made.

Point 3: Is it the intention of the panel that groundwater quality data may not indicate success or failure of on-surface N management practices *at an individual farm or field* under certain soil and depth to groundwater conditions? It is recalled that the panel did discuss certain conditions where measuring groundwater quality would indicate the effects of on-surface N management practices.

Point 4: This item, while true in certain circumstances, does not seem to be universally true. It is suggested to reword this statement to reflect the panel's discussion of the many different conditions that exist in California.

Point 5: It is not clear what general understanding point is to be made by this item and it is requested that the panel clarify this statement.

Point 6: It is suggested that the panel expand on what it means by "poor quality." This statement could be interpreted in multiple ways, such as the data is not trusted because the sample results are not believed to be accurate and are thus misleading. It could also be interpreted as the data lacks all the metadata components that make it useful, such as depth of well, screened intervals, etc.

Points 7 & 8: It is suggested that the panel split up the nitrogen balance and time components in item 7. It is recommended to merge the nitrogen balance portion of this item with item 8 and focus item 7 on the difficulties of analyzing nitrogen data on a seasonal basis.

Point 9: Is the panel referring to graphs and figures used for crop recommendations or is it pertaining to general discussions about the nitrate and cropping issues?

Point 11: Does the panel mean to imply that it will take sustained education efforts to achieve results?

Point 12: It is suggested that the panel expands this discussion slightly by incorporating the example of almonds vs broccoli, found on page 15, to support this general understanding point.

Point 13: This does not seem to fit as a general understanding point and it is suggested to include this as a programmatic recommendation. Additionally, this point focuses on what cannot be done and what is not available, It is requested that the panel provide specific guidance on how regulatory efforts should proceed.

Point 14: It is requested that the panel further elaborate on this “one-size-fits-all” statement. As a blanket statement it seems to contradict other portions of the panel’s recommendations, which propose single universal approaches, such as education and training requirements and reporting of N applied.

Section 3.1: Essential Background Concepts (Pages 7 – 16)

Finding 1: It is suggested that the panel elaborate on this item, specifically why the panel is making this point and who the panel heard make this statement repeatedly during the public meetings. Certainly some form of data collection is necessary as the panel has called for data amongst its later recommendations, and it is unclear if the phrase “heard repeatedly” is referencing statements made by the panel members, invited speakers, members of the public, etc.

Finding 3: This statement appears here and on page ii of the executive summary. Here it is elaborated with a follow-up example to further the point. However, the example seems to contradict the first sentence. It is suggested to reconsider the first sentence of this section to modify it from a broad statement with a contradictory example to a more specific statement that reflects the panel’s view on the applicability of data collection for changing nitrate levels in groundwater. It is also suggested that the panel consider editing the last sentence before sub-points ‘a’ through ‘d’ to clarify that these points are related to deep percolation to deep (not shallow) water aquifers.

Finding 4: The first portion of this statement appears here and on page ii of the executive summary. This statement, while true in certain circumstances, does not seem to be universally true. It is suggested to reword this statement to reflect the panel’s discussion of the many different conditions that exist in California.

In the second paragraph of this statement, does the panel mean that the graphs illustrate how cropping patterns have changed? It is not clear what ‘things’ have changed and the last sentence is confusing.

Finding 5: It is recommended that the panel clarify this statement here and on page ii of the Executive Summary.

Finding 6: It is suggested that the panel expand on what it means by “poor quality.” This statement could be interpreted in multiple ways, such as the data is not trusted because the sample results are not believed to be accurate and are thus misleading. It could also be interpreted as the data lacks all the metadata components that make it useful, such as depth of well, screened intervals, etc. This also appears on page ii, in the Executive Summary.

Finding 9: Is the panel, here and on page iii of the Executive Summary, referring to graphs and figures used for crop recommendations or is it pertaining to general discussions about the nitrate and cropping issues?

Finding 11: Here and on page iii of the Executive Summary, does the panel mean to imply that it will take sustained education efforts to achieve results? If so, it is requested that the panel provide specific guidance on how it would be best to approach these educational efforts.

Finding 13: Here and on page iii of the Executive Summary, the idea of the paradigm shift is introduced. The term ‘paradigm shift’ seems to convey a complete change in approach from that which has been taken to date. Is the panel suggesting something more along the lines of a ‘shift in emphasis’ (i.e. from monitoring and reporting to implementation of better management practices and education requirements)? The current regulatory programs do contain the suggested components to varying degrees, so it may be that the panel is suggesting certain elements be emphasized over others. If so, it is requested that the panel please clarify.

Finding 14: Here and on page iii of the Executive Summary, it is requested that the panel further elaborate on its “one-size-fits-all” statement. As a blanket statement it seems to contradict other portions of the panel’s recommendations, which propose single universal approaches, such as education and training requirements and reporting of N applied.

Section 3.2.1: Risk and Vulnerability (Pages 17 – 21)

In this section the panel seems to be stating that risk and vulnerability determinations should not be used for determining which farming areas are subject to regulatory requirements, but rather that the application of requirements should be uniform. However, this seems to contradict other sections of the report where a singular reporting requirement and education component are called for. It is requested that the panel further refine its points and clarify the interrelation between them.

Key Point A: Does the panel mean that this definition is not applicable *at the field level*? Could this Key Point be considered a counterpart to Key Point 'B'?

Key Point B: It is recommended to replace the words '...should even be...' with the word '...is...'

Key Point C: It is recommended to move this point to the beginning of this section as it seems to capture the panel's overall conclusion on this section. Since the panel does not believe that there is a "general applicable" method, might it then suggest or provide guidance on what can be done for known specific conditions?

Key Point D: Does the panel mean that this not appropriate in deep groundwater aquifers? Does the panel believe this might be an appropriate monitoring technique for some fields meeting specific conditions, such as having shallow groundwater?

Key Point E: It is recommended to delete the word 'index' following 'NHI' to prevent redundancy. Additionally, it is suggested to reorganize the statement to begin with 'It is best to obtain direct data of the nitrogen applied by field/crop...' It is recommended to consider including an example of the direct data suggested by the panel.

Key Point G: Does the panel mean that coalitions should develop a process and procedure to identify areas to direct their efforts for improvement?

Key Point H: Does the panel mean that the usage of nitrogen cycle modeling will not accurately predict deep percolation of nitrogen *on an individual field level*?

Section 3.2.2: Application of Management Practices (Pages 22 – 30)

In this section, the panel discusses two major university groups which provide irrigation and nutrient management education: Cal Poly (SLO) and UCCE. This section would benefit from acknowledging other available education programs and incorporating them into the compare and contrast discussion.

Key Point I: It is suggested to add the word 'both' after 'reduce' (i.e. '...zones is to reduce both the volume...') and to omit the word 'also' following the comma (i.e. '...and to match the available...').

Key Points K & L: It is suggested to reconsider the use of the word 'excellent' when referencing irrigation and nitrogen management plans or education programs, as this word is subjective.

Key Point N: It is suggested to delete the words 'if identified' between the commas in this key point.

Key Point Q: It is recommended to delete the first sentence of this key point and to reword the statements to focus more on recommendations to the Boards rather than direction to the Boards. A suggestion for revision is as follows:

The panel believes that the State and Regional Water Boards should agree on the qualifications of the individuals who will create and evaluate irrigation and nutrient management plans and the requirements of these plans. It is recommended that individual plans will not require approval from the Water Boards, but must be available for Water Board staff review.

Key Point P: It is suggested to combine this Key Point with Key Point L.

Key Point Q: Does the panel mean that mandatory attendance is necessary for proposed education programs to succeed?

Key Point R: Is the panel suggesting that crop nitrogen recommendations need to use consistent and clear language to prevent confusion in interpretation and execution of guidance? If so would the panel consider making a suggestion on how it believes crop nitrogen recommendations could best be made?

Section 3.2.3: Verification Measures (Page 31)

Key Point S: Here, the panel lists several metrics that it believes will not be effective, and calls for a different metric to be used. However, the panel does not detail a metric it prefers, or metrics that show promise and should be further studied.

Recommended Additional Key Point: It would be beneficial if the panel were to develop a discussion similar to Key Point Y for this section.

Section 3.2.4: Reporting (Page 32 – 34)

In the last paragraph on page 32, does the panel mean that data collected should not be used for enforcement *initially*? Many of the Water Board's regulatory programs have self-assessment and self-reporting as main components of their programs. As a regulatory agency, any information submitted to the Water Boards will have the potential to be used for compliance assistance or enforcement.

Key Point U: Does the panel mean that it is important to ensure that data collected has value?

Key Point W: Does the panel mean that it is inadvisable to require *reporting* of annual nitrogen cycle computations for fields? The current statement seems to also suggest that annual computations would not need to be completed for crop management purposes, and this is contradictory to the panel's suggested development of irrigation and nutrient management plans.

Key Point X: Is the panel suggesting that nitrogen management is not the same for all crops and that some crops can be relatively simple while others can be complex?

Key Point Y: It is recommended for the panel to consider the Nitrogen Tracking Task Force recommendations, which are similar to Key Point Y and may be incorporated as appropriate.

Key Point Z: It is recommended for the panel to review Region 3's definition of reporting unit alternatives for 'management block' and 'nitrogen risk area' to see if these are the same, or similar, to what the panel has defined.

Key Point AA: It is recommended for the panel to clarify that data collected and reported on an annual basis will be evaluated on a multi-year basis.

Section 3.2.5: Surface Water Discharges (Page 35)

Key Point BB: It is suggested to consider striking the first sentence of this key point and replacing with a sentence from the main discussion that states "The recommendation is to take sufficient samples in the watershed streams to detect if problems do indeed exist. The sampling should be of sufficient density (spatially and temporally) to identify general locations of possible pollution."

Recommended Additional Key Point: It is recommended to incorporate the information contained in the last paragraph of this section to create a key point that would describe the conditions when point discharge monitoring would be appropriate. Additionally, it is requested to consider how to determine the frequency of monitoring, both for cooperative participants and non-cooperative participants (i.e. those that deny access to their land for sampling).

Part II: State Water Board Staff Editorial Recommendations for *Conclusion of the Agricultural Expert Panel, Recommendations to the State Water Resources Control Board pertaining to the Irrigated Lands Regulatory Program*

Inside Cover

Following the Expert Panel Names, under 'Prepared for' it is recommended to delete the floor number in the address such that this section reads:

Prepared for

California State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Executive Summary (Page i)

The first sentence of the report uses the abbreviations 'Expert Panel' and 'State Water Board' without defining them prior or separately. The following language is suggested:

The Agricultural Expert Panel (Panel) was convened to address thirteen questions posed by the State Water Resources Control Board (State Water Board)...

Questions Posed to the Expert Panel (Page i)

Question #1 uses the abbreviation of ILRP, since this abbreviation was not previously defined, it is suggested to define here:

1. How can risk to or vulnerability of groundwater best be determined in the context of a regulatory program such as the Irrigated Lands Regulatory Program (ILRP)?

Questions #7 and #10 are very similar questions but as written, #7 references 'usage of various nitrogen management...', #10 references 'usage of listed verification measures...' without the referenced list following. It is suggested to rephrase #10 to match #7 to read:

10. Evaluate and make recommendations regarding the usage of various verification measurements of nitrogen control.

Programmatic Recommendations from the Agricultural Expert Panel (Page ii)

It is suggested to consider reversing the order of the sections for General Understanding and Programmatic Recommendations.

The first sentence under 'Programmatic Recommendations' defines the term 'the Panel.' A previous suggestion included this definition on page i. Therefore it is suggested to just use the abbreviated 'The Panel...' here. This may also apply to the heading for this section.

Key Points of the Panel Related to the Specific Questions Posed by the State Water Board (Page iii)

In the title of this section, it is suggested that the last word 'Staff' be deleted so the title reads:

Key Points of the Panel Related to the Specific Questions Posed by the State Water Board

Similar to above, the term 'State Water Board staff' is used in the text below the heading, it is suggested to delete the word 'staff' here as well. Additionally, it is recommended to replace 'between various questions' with 'between the questions.' Finally, it is suggested to replace 'next pages' with 'following pages' such that the last two sentences will read:

The table below provides the linkage between the questions from the State Water Board and Key Points provided by the Panel. The Key Points are listed on the following pages.

Key Points of Regarding Vulnerability & Risk (Page iv)

In Key Point A, it is recommended to use the name of the Central Valley Regional Water Quality Control Board or define the acronym CVRWQCB.

Section 1: Background

The title of Section 1.1 reads 'Call for an Panel' it is suggested to edit this to read 'Call for a Panel.'

The 5th line of section 1.2 Agricultural Expert Panel uses the full name of the Agricultural Expert Panel, followed by defining it as 'the Panel.' Since this was previously defined, is suggested to edit this to read 'the Panel.'

It is suggested to insert the word 'The' at the beginning of the final bullet of section 1.2.1 which will then read:

- The ITRC was mandated to write the final report on findings and summary of project discoveries and recommendations.

Section 1.2.2 introduces the panel members, their affiliations and locations/regions of their work. However, some of the panelists' locations follow commas while others are enclosed in parenthesis. It is suggested to use the same format for each panelist.

It is suggested that the word 'over' be deleted from the second line of section 1.3.1.

In section 1.3.2 it is suggested to consider the insertion of the word 'the' on the first line in front of 'Cal Poly ITRC.' Additionally, it is suggested to spell out 'per' on the last line such that the last sentence reads:

'Public comments were invited, but were restricted to 2 minutes per person due to limited time.'

Section 1.3.3 directs readers to Appendix D containing all of the meeting agendas. It is suggested to remove the agendas and direct readers to the website where they can find and download agendas if desired. A tabulated schedule of the meetings can be included here in lieu of the series of agendas.

Section 2: Questions for the Panel

It is recommended to delete the word 'staff' from the first sentence of this section so that it reads 'The State Water Board provided...'

On the 4th line of section 2.1, due to a previous definition it is suggested to replace the words 'Irrigated Lands Regulatory Program (ILRP)' with 'ILRP'.

Section 3.1: Essential Background Concepts

Under point #2, bullet letters 'a' and 'b' are italicized while 'c' is not.

On page 9, it is suggested to split up the title of Figure 2 such that 'Provided by Dr. Joel Kimmelshue' would appear on the second line.

For illustrative and comparison purposes is suggested to adjust the graphs in figures 3-5 (pages 10, 11 and 12) so that the x-axes have equal time periods and scales. It is suggested to adjust the dimensions of each figure's graphs so that they appear equal in size and consistent in inclusion or exclusion of a key. It is also suggested to delete 'major' from the titles of figures 3-5 to read 'Graphs of changes in...'

On page 15, under item 11, it is suggested to revise the language that reads 'Testimony from Parry Klassen... showed that...' to 'Testimony from Parry Klassen... stated that...'

On page 16, under item 13, it is suggested to use 'ILRP' in lieu of 'Irrigated Lands Regulatory Program' and specify Region 5 in the reference to the Dairy General Order.

Section 3.2: Key Points and Recommendations by Panel

The first paragraph of section 3.2.1 references Recommendation 6, however it is not clear in the report where this recommendation comes from. It is recommended to site the source of this information.

It is recommended to define the acronym CVRWQCB in the second paragraph of section 3.2.1. Additionally, this acronym is used on the second paragraph of section 3.2.1.i and the second paragraph on page 19, but is missing the article 'the'. It is suggested to add the article before these instances.

In the indented quotation in section 3.2.1.i on page 18, it is suggested to define the acronym MRP, as Monitoring and Reporting Program.

On the top of page 19, it is suggested to define the acronym MCL.

The fourth paragraph on page 33 uses both disincentive and dis-incentive. It is suggested to delete the hyphen from the second usage for consistency.