

LATE COMMENT

**Comments Addressing the Agricultural Expert Panel Draft Report
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The defining characteristic of non-point source pollution (NPS) is that the problem is generally the result of many individuals, operating over an extended period of time. It is the sum total of these actions, including particularly egregious actions of some, that have created the current problem. The Panel seems to have focused on the conundrum facing the various Water Quality Control Boards (Boards) as regards nitrogen contamination, which is: "Do we recognize the probability that for a given area, the majority of irrigated agriculture is or has been involved at some level in the problem and thus, the best option is to try to reform agriculture practices as a whole- or do we focus our limited resources on trying to identify especially egregious operators?"

Our understanding of the model for NPS is that it consists of a three-stage process (although we recognize that some may combine the first two):

1. Availability - a potential contaminant is introduced into the environment
2. Detachment/Transformation - the potential contaminant is involved with some process that makes it susceptible for movement from where it is supposed to be (e.g., a nitrite form of nitrogen (N) is transformed to a nitrate form, or improper tillage operations result in excessive sediment)
3. Transport - the potential contaminant is moved to where it can become a true contaminant. For example, note that movement of some N to groundwater is not contamination per se; it is the resultant concentration of N over time from this movement that is the problem.

Thus, to control or prevent NPS one needs to minimize Availability, Detachment/Transformation, and Transport. The Draft recognizes this in several places where it discusses the need for improved irrigation practices (so as to limit Transport) as well as control of total N applications (so as to limit Availability). We believe the above model provides an important framework for evaluating future actions and responses. Additionally, we would point out that the timing and form of the N application(s) is related to the Detachment/Transformation mechanism, which allows for Transport to occur. We believe these elements should be explicit components of any Management Plan.

We strongly support increased education and outreach regarding all aspects of the NPS model to create problem and solution awareness in the agricultural community as a whole, including farmers and the technical groups that advise them. We continually develop and present seminars on many subjects regarding water and energy management in many different venues. Further, we believe that well-conceived water and fertilizer management plans should be a part of all farming operation.

In closing, we agree that groundwater quality monitoring needs closer scientific scrutiny, especially in regards to its use for real-time regulatory purposes. Thus, it would seem that a priority should be given to developing and implementing an appropriate feedback mechanism that can answer the question of whether current agricultural practices are working to protect and/or improve groundwater conditions. Finally, we encourage the continued dialog between agricultural interests and the regulatory community to find the correct balance of better information and practical steps to address the groundwater quality challenge.

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