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## California Regional Water Quality Control Board Central Coast Region

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TO: Tom Howard  
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FROM: Roger W. Briggs  
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CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

DATE: January 30, 2012

SUBJECT: CENTRAL COAST WATER BOARD RECOMMENDATIONS  
REGARDING SBX2-1 NITRATE STUDY (01/12/12 INTERNAL DRAFT) REPORT TO  
THE LEGISLATURE

Four basic elements are required to successfully protect groundwater resources and public health from nitrate pollution. Any strategy that is implemented will likely fail if any of these elements are not included or adequately addressed:

1. The short-term and long-term provision of "pure and safe drinking water" to impacted communities and individuals until source control efforts reduce the public health threat to acceptable levels.<sup>1</sup>
2. Source control (reduction) of nitrogen loading from irrigated agriculture<sup>2</sup> [emphasis added] and other localized sources such as dairy or other confined animal facility, septic system and municipal/industrial wastewater discharges.
3. Monitoring and assessment to evaluate short-term and long-term performance in 1) source control efforts, 2) achieving water quality improvements, and 3) protecting public health.
4. And, the perpetual funding mechanisms by which the implementation of the above three elements are supported by existing or new programs.

<sup>1</sup> Section 116270(a) of the California Health and Safety Code states "Every citizen of California has the right to pure and safe drinking water."

<sup>2</sup> Source control efforts should include both fertilizer and irrigation efficiency best management practices (BMPs) given the timing, rate and method of both irrigation water and fertilizer application are the primary drivers for nitrate leaching to groundwater.

Although section 6.1, *Areas of Promising Action*, of the January 12, 2012 SBX2-1 draft report broadly suggests various "promising actions" to address these four elements, we feel more specific recommendations are needed for timely and effective action to address this very significant public health and water quality issue. The SBX2-1 report categorizes the above four elements as 1) Safe Drinking Water Actions (D), 2) Source Reduction Actions (S), 3) Monitoring and Assessment (M), and 4) Funding (F), respectively.

The following includes our review of selected "promising actions" within the report. We are also providing additional and more specific actions that should be put forth as recommendations to the legislature.

### Safe Drinking Water Actions

As suggested via action D4 (Domestic Well Testing), statewide requirements for the regular sampling of domestic wells and local small (2 to 4 service connections) and state small (5 to 14 service connections) water systems (wells) are necessary to protect the most at-risk population from nitrate pollution<sup>3</sup> and provide data for ongoing assessment efforts.<sup>4</sup> A tiered sampling frequency based on nitrate concentration and relative risk should be developed in conjunction with triggered sampling requirements based on point of sale (i.e., as part of home inspection or disclosure requirements) and local permitting applications (i.e. building permits for new construction, renovations, well permits, septic system repairs, etc.).<sup>5</sup>

We are in support of actions like D1, D2, D3 and D5 that will provide cost effective solutions for domestic well owners and small water systems polluted with nitrate with an emphasis on disadvantaged communities. However, we are concerned with the apparent emphasis on the "small water system task force" and "regional consolidation" made within actions D2 and D3, respectively, given appropriate and cost effective solutions will likely need to be evaluated on a case-by-case basis. To be clear, significant long-term funding support and regulatory oversight by CDPH and local drinking water program primacy agencies is going to be required in some areas to ensure the provision of safe drinking water for domestic wells and small water systems until nitrate pollution is reduced. CDPH in coordination with other agencies should develop a flexible funding program for various remedial solutions based on risk and need that addresses all types and sizes of water systems polluted with nitrate.

### Source Reductions

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<sup>3</sup> These water systems/well are more susceptible to nitrate pollution due to their typically shallower depths and rural locations adjacent to agricultural areas.

<sup>4</sup> CDPH and the State/Regional Water Boards need this information to effectively evaluate/address the at-risk population, document improvements over time and address the sources of pollution.

<sup>5</sup> Since 2010 we have been advocating that the local county health departments within our region implement triggered and tiered nitrate sampling requirements for small drinking water systems/wells.

We are in support of action S1 for the development and implementation of a comprehensive state wide effort lead by CDFA to improve nitrogen use efficiency and subsequently reduce loading to groundwater. In response to the 1988 SWRCB *Nitrate in Drinking Water Report* to the legislature, the development of the CDFA Fertilizer Research and Education Program (FREP) in 1990 was intended to do this. However, FREP was severely underfunded and lacked an accompanying regulatory effort to require and document the local, regional and statewide application of improved management practices and achievement of tangible improvements over time.

Voluntary research, education and outreach programs like FREP should not be construed as the panacea for source control given they lack accountability. Additional and ongoing regulatory oversight via State and Regional Board programs (i.e., Irrigated Lands and Agricultural Regulatory Programs) are necessary to require and document improved practices and reduced loading as appropriate to protect the beneficial uses of surface water and groundwater. To be effective at regulating agricultural discharges, State and Regional Board priorities and resources need to be brought into alignment with the magnitude of this significant problem.

Action S2 for the development of a "nitrogen mass accounting task force" may be helpful, but it is not a necessary step prior to "regulating" nitrate discharges due to fertilizer-nitrogen application. Consider these three important points:

1. Recent studies indicate the application of **currently available irrigation and fertilizer management practices can result in up to 60 percent reductions in fertilizer-nitrogen application and subsequent groundwater loading** for some crops (leafy greens in the Salinas Valley) while maintaining crop yields.
2. Whereas, Figure 7 of the SBX2-1 report indicates **an approximately 30 percent reduction in fertilizer-nitrogen application for "vegetables and berries" would result in agricultural leachate/recharge meeting the drinking water standard for nitrate.**
3. The recent studies also indicate **the costs associated with implementing available management practices could be partially if not completely offset by reduced fertilizer and irrigation pumping costs.**

Therefore, it is reasonable to immediately require and document localized source control efforts via our regulatory authority while evaluating regional scale nitrogen mass balance models or other regulatory instruments that will help bridge the gap between currently achievable loading reductions and what is required to bring our groundwater basins into sustainable balance.

We strongly recommend the development and implementation of State and Regional Board regulatory tools, such as the Central Coast Agricultural Order and Central Valley Long-term Irrigated Lands and Dairies Programs to require the implementation, monitoring and reporting of source control reduction efforts by agricultural dischargers.

Although not included within the "Promising Actions" section, the draft SBX2-1 report identifies maximizing the recharge of clean water from sources other than agricultural return flows as a potentially significant contributing factor in bringing our groundwater basins back into balance with regard to both supply and quality. Consequently, state funding project selection criteria for water supply and water quality related projects should be evaluated based on the potential benefits of recharge projects to help address this significant problem. Recharge through Low Impact Development will help and is necessary in the urban areas.

### Monitoring and Assessment

We are already defining areas at risk of nitrate pollution (action M1) in the Central Coast given it is a regional priority to address this significant problem. Doing so is a rather simple exercise in land use, soil type, crop type and water quality data mapping. Although additional resources could improve these efforts, it will be more effective to allocate funding and staffing towards providing clean drinking water to the public, regional groundwater and drinking monitoring, and regulating agricultural discharges given 96 percent of nitrate loading is attributable to the application of fertilizer-nitrogen (i.e., the highest risk areas are generally agricultural areas).

We are in support of action M2 (Monitor at-Risk Population) if it addresses the most at-risk population of domestic well owners and residents connected to local and state small water systems. CDPH should already be doing this task for public water systems with 15 or more service connections via its Water Quality Management (WQM) and Permits, Inspections, Compliance, Monitoring and Enforcement (PICME) databases. The WQM data are periodically uploaded into GeoTracker GAMA. The real question, apropos to action M4, is how to manage and evaluate groundwater and drinking water quality data in an effective manner. A "groundwater data task force" (action M4) is likely to tell us what we already know to be true; that groundwater and drinking water data, although directly related, are managed and tracked separately via various incongruous reporting and database structures implemented by different agencies. A centralized and robust statewide database and reporting structure that includes all wells and water systems is required to effectively conduct ongoing assessment of groundwater and drinking water data. GeoTracker GAMA currently provides the most utility in capturing and tracking both groundwater and drinking water quality data.

Although GeoTracker has been very effective at capturing localized groundwater quality data associated with UST and SLIC sites, statewide CDPH public drinking water well data and regional snapshots of groundwater quality (via special study and priority basin projects with an emphasis on public water supply wells), it currently does not provide or otherwise support ongoing regional groundwater monitoring and assessment using dedicated well networks. Dedicated monitoring well networks are required for consistent regional groundwater monitoring and assessment given drinking water wells are subject to abandonment and replacement over time. Numerous local agencies and water districts are implementing regional groundwater monitoring programs throughout

the state that could be leveraged to provide an ongoing and robust assessment of regional groundwater quality. Therefore, we recommend that significant resources be allocated to build on GeoTracker GAMA as the statewide repository and assessment tool for groundwater related drinking water quality data, regional water quality data and well construction data. Specifically, we recommend the following:

- Requirements for regular/periodic domestic well and local and state small water system well sampling specify data be transmitted electronically to GeoTracker GAMA via EDF.
- Ramp up the GAMA Domestic Well Project program to increase domestic well coverage and include local small and state small water systems if statewide sampling requirements for these systems and domestic wells are not adopted.
- Provide CDPH and local health departments (drinking water and well permitting programs) regulatory access to GeoTracker GAMA with specific functional capabilities that enable them to manage their drinking water and well permitting programs more effectively.
- Development of a statewide Quality Assurance Project Plan (QAPP) for the collection and management of groundwater and drinking water quality data (akin to SWAMP). This effort should include an evaluation of the EDF and EDT electronic data reporting formats currently utilized by GeoTracker and CDPH, respectively.
- State and Regional Boards identify and collaborate with local agencies and water districts to leverage existing regional groundwater monitoring programs for ongoing reporting and assessment via GeoTracker GAMA.
- Allocate additional funding to support the pending Recycled Water Policy salt and nutrient management planning efforts.<sup>6</sup> Particularly with regard to the development and implementation of management plans and regional monitoring programs.
- Require groundwater data generated via the pending salt and nutrient management plan monitoring programs be transmitted electronically to GeoTracker GAMA via EDF.

Consistent with the gist of action M3, local (parcel scale), regional and statewide tracking of fertilizer-nitrogen application will be a crucial component of evaluating the efficacy of source control (load reduction) efforts. The Department of Pesticide Regulation (DPR) Pesticide Use Reporting (PUR) program has proven very beneficial in evaluating the link between pesticide application and surface water and groundwater

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<sup>6</sup> Despite our best efforts to kick start these efforts in the Central Coast Region, salt and nutrient management planning efforts are languishing in most areas given local agencies and municipalities are struggling to fund them. In addition, the largest salt and nutrient contributing (discharging) stakeholder groups associated with irrigated agricultural are typically not participating in the process. This is problematic for local agency and municipal stakeholders, and the development of reasonable management plans by these entities as a whole, given significant source control efforts by the smallest contributing stakeholders will only result in minor improvements in regional water quality.

pollution from pesticides. This model could be equally effective in tracking fertilizer-nitrate application and evaluating associated water quality impacts over time. Implementation of a nitrogen use reporting program should not preclude the State or Regional Boards from requesting fertilizer-nitrogen application data or other related information from individual growers as necessary to regulate agricultural discharges and protect water quality. Parcel scale crop data would also need to be evaluated to determine relative nitrogen use efficiencies and subsequent losses to groundwater and the atmosphere.

In place of actions M2, M4 and M5, State Board, CDPH and CDFA, with support from other appropriate agencies such as the Regional Boards and DWR, should provide annual updates to the legislature regarding their respective and coordinated efforts to reduce agricultural related nitrate loading and protect public health. The reports should document and evaluate the development and efficacy of implementation efforts to reduce nitrate loading, provide safe drinking water for polluted water systems/wells, monitor both regional groundwater quality and drinking water system/well impacts, as well as evaluate the efficacy of interagency coordination and resource allocation. This would require the development of an interagency nitrate task force comprised of various state agencies such as CalEPA, CalNRA, State and Regional Boards, CDPH, CDFA, DWR etc. Annual reports would hold the various responsible agencies accountable for tangible results and allow for the timely implementation of adaptive management strategies as needed to be more effective and efficient. The five year reporting schedule alluded to within actions M2 and M5 would likely result in a loss of momentum and focus on this significant water quality and public health problem.

#### Funding

Significant and yet to be determined funding and staffing resource allocation is required to address this significant problem.

We are in support of actions S3 and S4 given fees or taxes on fertilizer places the cost of nitrate pollution on the source of the problem instead of the symptoms of the problem.<sup>7</sup> Consequently, we are less supportive of a "Water Use Fee" (action F4). Fertilizer fees or taxes would generate revenues to provide safe drinking water to small water systems and disadvantaged communities and fund various local, regional and statewide programs while also incentivizing reduced fertilizer usage. Although there may be a significant lag time in some areas, drinking water and regulatory oversight costs associated with nitrate pollution should go down as nitrate loading is reduced over time. As revenues generated from fertilizer fees/taxes decrease and groundwater quality improves, less funding will be required for the provision of clean drinking water and remaining funds could be utilized to maintain ongoing core regulatory and monitoring programs associated with agricultural discharges.

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<sup>7</sup> We are currently paying for this problem at the tap with disadvantaged and both rural and urban agricultural communities bearing a disproportionately high and increasing share of the burden.

Consistent with action F1 (Mill Tax), it is reasonable for the Director of CDFA to increase (double) the current mill tax on bulk fertilizer to the full amount allowable by law for FREP and related CDFA Fertilizing Materials Inspection Program funding to address this problem.<sup>8</sup> The additional funds could be used to increase FREP program implementation and grant funding and support other programs such as a nitrogen use reporting program.

Per action F2 (Local Compensation Agreements), the application of CWC Section 13304 for the provision of replacement water supply by agricultural discharges is a regulatory tool that should be implemented on a case-by-case basis. As alluded to within the SBX2-1 report, it can be cumbersome when dealing with multiple and transient responsible parties over large areas. An evaluation of regional applications of this CWC section for the development of "liability districts" appears promising in that it has the potential to address drinking water impacts and incentivize source reduction efforts on a more localized basis. However, doing so may require lessening the burden of proof in linking potential dischargers to drinking water system/well impacts and subject us to potential appeals and lawsuits. In addition, this may not be fair to individual land owners or operators within "liability districts" who are not contributing to groundwater impacts.

Additional evaluation by various state agencies with various jurisdictional authorities related to the sources of nitrate and associated impacts is needed to determine the costs associated with the long-term funding of appropriate public health, source control and monitoring programs.

### General Comments

#### *Task Forces*

The SBX2-1 report relies heavily on the creation of four task forces. Clearly, additional evaluation, coordination and collaboration are required to sufficiently address the nitrate problem and its symptoms. However, we should be cautious in relying too heavily on recommendations for task forces or other groups for additional evaluation in light of the immediate implementation of various actions that will result in reduced loading and the protection of public health in the near-term. The 1988 SWRCB *Nitrate in Drinking Water* Report to the legislature resulted in various task forces and TACs, yet limited tangible actions were implemented to address the problem. If task forces are recommended, they should be required to produce specific and actionable recommendations within a reasonable time frame while other actions are initiated that will result in tangible improvements over time. Otherwise, we are just putting off dealing with the problem, again.

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<sup>8</sup> Division 7, Chapter 5, Article 6, Section 14611 of the California Food and Agricultural Code

*Getting Organized (Section 6.3)*

We concur with this section. A coordinated and collaborative interagency effort is necessary to address this significant water quality and public health problem given the overlapping issues and jurisdictional authorities of several agencies associated with both the nitrate problem and its symptoms. Keep in mind that we need to get organized for both the short- and long-term, given actions taken now may result in more immediate improvements in water quality in some areas whereas it may take several decades to reverse the damage in other areas. This is going to require a unified commitment to act now and continue to act in the future.

Closing Comment

We appreciate the opportunity to participate in the development of the SBX2-1 report to the legislature and are committed to participating in any additional statewide efforts given nitrate loading from irrigated agriculture and associated impacts to the municipal beneficial uses of groundwater is the highest priority water quality and public health problem in the Central Coast Region. Although we are committed to addressing this problem in our region regardless of the final outcome of the SBX2-1 report, we are hopeful it doesn't suffer the same fate as the 1988 nitrate report to the legislature.

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