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Via Electronic Mail

Comments on the Central Valley Dairy Representative Monitoring Program's draft Monitoring and Reporting Workplan and Monitoring Well Installation and Sampling Plan

Central Valley Water Board

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Chairperson Hart and Members of the Board:

These comments are submitted on behalf of California Sportfishing Alliance, Clean Water Action, Community Water Center, and Food and Water Watch. We are a group of nonprofit organizations concerned about the impacts of groundwater contamination on Central Valley communities and the environment.

As you know, today many thousands of people in the Central Valley cannot use the tap water in their homes for drinking or cooking due to nitrate contamination. In some areas in the Valley, more than 20% of small public water systems are already unable to supply safe drinking water, including many of our Valley's schools, which must use their shrinking educational budgets just to supply safe water to students and teachers. Many more communities are on the edge, forced to pay for expensive nitrate treatment or close wells, limiting local drinking water supplies and creating additional barriers to local economic development.

The draft Representative Monitoring Program workplan submitted by the coalition does not meet the criteria required to determine whether Central Valley dairies are in compliance with the General Order for Existing Milk Cow Dairies (Order No. R5-2007-0035). Because it does not meet these criteria, we cannot support it. Our specific comments are below.

1. The Purpose and Structure of the Dairies Regulatory Program and Its Subsidiary Monitoring Program

The General Order is the regional water board's sole regulatory program to protect the quality of state waters from discharges to surface and groundwater by Central Valley dairies. The overarching purpose of this regulatory program is to protect water quality, as is required by law in Porter-Cologne, the relevant basin plans, and state board policies. In line with these legal

requirements, the General Order requires dischargers to demonstrate compliance with state water quality laws and regulations, including (a) the California Water Code and Central Valley basin plans, which prohibit discharges that contribute to exceedances of water quality objectives in receiving waters, and (b) State Water Board Resolution 68-16 (the Anti-Degradation Policy), which is an enforceable water quality standard in the state of California and requires the regional board to limit degradation to that level which will maximize overall benefit to the people of the state and to require regulated dairies to implement Best Practicable Treatment and Control (BPTC).

Monitoring discharges from dairies is necessarily the primary mechanism for ensuring compliance with these legal requirements, as without this information, violators cannot be identified. To this end, the General Order explicitly requires dischargers to monitor groundwater “*to ensure that groundwater protection is being achieved*” (IS-9 (emphasis added)). Unfortunately, the proposed revisions to the Representative Monitoring Program (RMP) through its implementing workplan do not comply with this directive. As drafted, the workplan is nothing but a research program for the regulated industry, supposedly designed to help dairies identify best management practices. In fact, the workplan's stated goal is “*to identify dairy farm practices protective of groundwater quality (including practices currently employed in response to the General Order) using a data collection and analysis effort that targets a subset of Central Valley dairy farms*” (p. 1 (emphases added)). Pursuant to the General Order's language quoted above, the dairy monitoring program must be structured to assess compliance with all applicable water quality laws and regulations, not just to assess the efficacy of specific current practices. Nevertheless, the RMP's stated goal patently omits monitoring for compliance with water quality objectives or optimizing levels of further degradation of state waters.

2. Compliance, Enforcement, and Liability

Although additional data collection and information are generally always welcome, this is not the purpose of a regulatory program, and the effect is actually to gut the dairy regulatory program, because monitoring is really the only means by which violators can be identified. By revising the RMP to become merely a research effort into best practices, the authors are ensuring that there is no mechanism for the dairy program staff on the regional water board to ensure compliance with water quality objectives and take enforcement action against individual dairies whose discharges contribute to exceedances of water quality objectives.

As the Board well knows, the California Water Code specifies that it is a regulatory agency's duty to determine compliance, not the effectiveness of the means of compliance. A program with the stated goal of identifying specific protective practices, when that program is put forth as a substitute to the individual monitoring program created by the Board to determine permit compliance, is insufficient. This is particularly the case when, in the course of determining the effectiveness of specific practices, a program allows groundwater degradation to continue unabated, with no requirements for more than 1600 existing milk cow dairies covered by the General Order to alter their existing practices to meet enforceable compliance standards.

If the Board adopts the proposed revisions, the RMP as applied will take the entire dairies General Order out of compliance with both Porter-Cologne and the State Anti-Degradation

Policy. The monitoring program is the mechanism for gathering data for the entire program, but these revisions effectively make it impossible for regulators to identify individual dairies that are not in compliance with water quality standards or are degrading state waters to the detriment of the people of the state. There is no way that dairies can be required to implement protective practices if they are not being monitored, but instead are “paired” with representative dairies that are being monitored. We raised this concern repeatedly in past comments. While the regional board's dairy staff has asserted that there would not be a problem, the coalition proposal itself acknowledges that enforcement on unmonitored dairies would never stand up in court:

“In theory this may be true, however each individual dairy may state that the underlying geology has not been defined for definition of highly permeable soils or shallow groundwater. Without a geological investigation of a specific site it cannot be determined that the soils are highly permeable and the groundwater elevation is shallow. Any enforcement action based on an investigation at another location would not likely be adopted by the Regional Board, upheld on petition to the State Board or upheld by a court. Any enforcement action would need to be based on the individual site specific conditions. Collecting the data for all the dairies with the requisite permeable soils and shallow groundwater would take a significant amount of time” (p. 3 (emphases added)).

It is clear, then, that we are really talking about spending six years to monitor 18 dairies with the expectation that only those 18 dairies would be required to make any changes in order to protect groundwater. The rest of the nearly 1,000 dairies enrolled in the RMP would continue business as usual, unmonitored, and could not be required to implement BPTC. This is simply unacceptable.

3. Noncompliance With State Anti-Degradation Policy

If the Board adopts the proposed revisions to the monitoring program, there will be no way under the General Order to determine whether dairies are causing degradation or pollution of state waters. Data collection that would facilitate such a determination has been excluded from the entire purpose of the monitoring program. Thus, these revisions will have the effect of taking the entire General Order out of compliance with the anti-degradation policy.

The state anti-degradation policy is a legally required and enforceable policy of the State Water Board. To date, the Regional Board's anti-degradation analysis has been entirely lacking with respect to the adoption of the General Order. In order to conduct a proper anti-degradation analysis going forward, the Regional Board must know the extent of existing groundwater degradation, as it is impossible to make an anti-degradation finding until the Board understands how significantly groundwater in the Central Valley has already been degraded. This will require much more comprehensive monitoring of a variety of site conditions, aquifers, and geographic regions to determine the degree and extent of degradation. The proposed RMP monitors only 18 dairy facilities out of the nearly 1,000 that have joined the coalition, and the vast majority of monitored dairies represent only one region and site condition, which is those with shallow depth to groundwater and extremely permeable soils. The proposed revised RMP misses the opportunity to gauge the extent of groundwater pollution by dairies in different site conditions,

regions and aquifers, making it impossible for the Board to conduct a proper anti-degradation analysis for the dairy program.

Moreover, operations participating in the coalition that are not located in such geographically sensitive areas – which we assume number in the hundreds – will not be asked to implement Best Practicable Treatment and Control technologies for years, since they will not be monitored or paired with dairies that are being monitored until at least six years out.

These shortcomings in the proposed revisions to the RMP reinforce our ongoing concern that the General Order is not in compliance with the state anti-degradation policy: in fact, the revised RMP would bring General Order even farther out of compliance. (The Board previously has argued that all dairies in the Central Valley would eventually have monitoring wells to detect degradation occurring, but now this has been excluded from the program and it's clear that there is no intention of ever installing monitoring wells on all dairies to determine where degradation or pollution are occurring.

4. Unnecessary Delay

Furthermore, at this stage, if the regional board adopts these proposed revisions to the RMP, it will effectively be wasting the time and resources of everyone involved.

The proposed RMP requires annual reports during Phase 1 that include data, hydrogeologic analysis, and information on the management of the specific dairy. It will also, according to the proposal, “assess current groundwater conditions and how they relate to historical operations” and “how dynamically changing dairy management practices... affect groundwater quality trends.” The Phase 2 annual reports, which will start at least a year but potentially longer after Phase 1 has been implemented, will “supplement the data record” and allow for conclusions that can be used to formulate management practices that better protect groundwater. A summary report on Phase 1 will be prepared within 6 years, which includes the results of data collection, findings related to historical and current dairy management practices, impacts of practices on groundwater quality, etc. The Multistakeholder Advisory Committee (MAC) will delineate management practices in response to the findings of the annual reports and then assess their feasibility. The proposal states, “subsequent implementation of management practices by the RMP will ultimately show whether they are protective of groundwater quality.”

This timeframe is unacceptably long. It allows for detected groundwater degradation to continue for at least six years before a complete analysis is done, with additional time spent while the MAC determines whether any management changes are “technically and economically feasible.”

It has been asserted that the information this work plan will generate is critical and a necessary precondition to board staff approaching individual dairies to issue enforcement actions, in that the data scheduled to be collected will provide staff with the proof they claim to need regarding the types of practices that are not protective of water quality in particular hydrogeologic conditions. However, the fact is that the regional board already has more than enough proof of the efficacy of particular practices to move forward with enforcement actions, once it identifies violators.

There have been numerous projects and studies conducted by the industry and academic researchers, both in California and elsewhere, to determine best practices on dairies to protect ground and surface water from degradation and pollution. Most notably, there is already significant research demonstrating that the existing widespread practice in the Central Valley of using unlined ponds to hold liquid cattle waste is not protective of water quality. In 2004, the Board-commissioned Brown, Vence & Associates study concluded that Title 27 lagoon requirements were insufficiently protective, and these results were even acknowledged in the General Order.

Particularly egregious is the fact that these conclusions were reached in board-commissioned studies analyzing the exact same dairies using the exact same practices on the exact same "management units" (*i.e.*, waste ponds and corals and fields) that the exact same dairy program staff personnel are now preparing to recommend be studied once again, for another six years, presumably to discover the same results and reach the exact same conclusions that the regional board has already determined. In other words, these revisions will just delay any implementation of a real regulatory program for at least six more years. These revisions to the monitoring program therefore appear to be nothing more than a stalling tactic by the authors to protect the economic interests of the industry that is supposed to be regulated.

4. Conflict of Interest

We reiterate our belief, stated in numerous previous comments submitted to the Dairy Program staff, that a coalition group paid by the dischargers should not be in charge of designing a monitoring program, the goal of which, according to the general permit, is to determine regulatory compliance. Because the coalition group is paid by and directly accountable to the dischargers, coalition groups have a conflict of interest when it comes to designing a program that can sufficiently identify and report violations. The Board's mandate is to protect beneficial uses, and there is no reason to assume that coalition groups would carry out this mandate.

The revisions to the RMP put forth by the dairy industry would transform the RMP into a liability shield, whereby no individual dairy (except the handful that will actually be monitored directly pursuant to the proposed workplan) can be held accountable for violations of the water code and basin plans. The revisions would also delay the implementation of a real regulatory program with the means to enforce compliance with water quality laws for another decade. We have no doubt that this structure proposed by the dairy industry is intentional, and this substantially reinforces our concern about the structure of a monitoring program that is designed and administered by a coalition group that is paid by the dischargers. The proposed design demonstrates not just that a conflict of interest exists, but that the coalition group is acting on its conflict of interest.

Notably, the work plan envisions creating technical advisory committees that consist of scientific and engineering experts, academics, regulators, and "dairy farm representatives", *i.e.*, policy advocates for the impacted industry. Notably missing from this list are residents from disadvantaged communities that are impacted by groundwater contamination attributable to dairy farm discharges, or their policy advocates, or even representatives of environmental interests, all

of whom are just as impacted by the outcome of the dairy regulatory program and its subsidiary monitoring program as the dairy farmers. Again, such a structure that excludes significant impacted stakeholders, and yet would include policy advocates for dairy farmers, is fundamentally flawed and further reinforces the existence of a conflict of interest on the part of the drafters of the proposed revisions.

5. Reduced Water Quality Protection Through Selection of Monitored Facilities

The Basin Plans charge the Board with ensuring the protection of beneficial uses, which include domestic and municipal supply. Consistent with this duty, in the General Order's individual monitoring program, the Executive Officer laid out criteria for prioritizing dairies for groundwater monitoring. These included proximity to domestic and municipal supply wells and groundwater recharge areas. In numerous previous comments submitted to the Executive Officer and staff, we asserted that in order to protect these beneficial uses sufficiently, any representative monitoring program would need to prioritize the monitoring of dairies located near domestic or municipal supply wells, although all groundwater with designated beneficial uses must be protected against impermissible degradation and pollution. No such criteria have been incorporated into the proposed RMP. This means that the proposed RMP offers reduced protection compared to the individual monitoring program in the General Order.

6. Reduced Water Quality Protection Through Limited Monitoring of Constituents of Concern

The General Order states the following:

“This General Order requires dischargers to monitor groundwater to ensure that groundwater protection is being achieved.... [The Order] will reduce impacts to surface water and groundwater at existing milk cow dairies by *requiring Dischargers to demonstrate compliance with State Water Board Resolution 68-16,...* Title 27 CCR for confined animal facilities, and the Basin Plans”

(p. IS-10, emphasis added).

The proposed RMP would monitor for total dissolved solids (TDS), nitrate and ammonia on a quarterly basis and for general minerals, nitrate, nitrate, ammonia and TKN on an annual basis. We are very glad to see quarterly monitoring for three constituents of concern. As we have stated numerous times in previous comments, however, the Central Valley Basin Plans also contain numeric criteria for coliform bacteria, which the current draft RMP does not propose to monitor. The draft RMP also leaves out electro conductivity (EC), one of the primary contaminants in the General Order's individual groundwater monitoring program and a key threat to the Central Valley's groundwater.

The General Order reviews contaminant limitations for receiving waters for dairies and lists “the most stringent limitations to implement narrative and numeric water quality objectives” as those for total coliform, ammonia-nitrogen, boron, chloride, nitrate-nitrogen, EC and TDS (IS-17.) The Order then notes that “[l]ess stringent limitations may apply to different areas but can only be

determined through a site-specific assessment.” The proposed RMP leaves out several of these contaminants without conducting a site-specific assessment and is therefore out of compliance with applicable water quality laws and regulations. The fact that the individual monitoring program is also out of compliance does not abdicate the coalition from the responsibility of meeting these requirements in its RMP.

Applicable law obliges the Board to institute a monitoring program that is not only able to identify whether groundwater has been impacted generally by degradation or pollution, but, if it has been, is also able to identify *which* constituents threaten beneficial uses for that particular location and do so for the constituents identified in the Basin Plans and other relevant laws and regulations.

7. Suggested Improvements

Instead of implementing unnecessary additional delays, the Board can and should acknowledge now that the discharge of pollutants to highly permeable soils over shallow groundwater will result in unacceptable degradation or pollution. If contamination is detected in a downgradient well that was not detected in a well upgradient of the facility,¹ then the facility should be found to be degrading groundwater and required to implement best practicable treatment and controls (BPTCs), including but not limited to lagoon liners and reduced application of dairy wastewater to fields. If the facility is contributing to exceedences of the water quality objectives and the stated groundwater limitations of the General Order, enforcement should be taken immediately, not after six years. Finally, if downgradient wells show contamination compared to upgradient wells, that constitutes a violation of the basin plans and the water code and should be reported immediately to the Board, not held over until it can be included in the Annual Report.

First and foremost, the Board should conduct more targeted monitoring by trying to identify where there are already exceedences of water quality objectives that impact community drinking water supplies and thus public health. (This can be done easily through testing domestic drinking water supply wells in the vicinity of dairies.) For those areas where this testing (or other testing done by the water supplier) demonstrates that constituent(s) of concern potentially associated with local dairies (such as nitrates) exceed the Maximum Contaminant Level, the Board should then require that monitoring wells be installed at dairies in these regions, or otherwise conduct more intensive studies through the RMP, to ensure that local dairies are not contributing to exceedences of water quality objectives and that impermissible levels of degradation are not occurring in these vulnerable areas that negatively impact human health. This is a very basic and fundamental element of a regulatory program to protect water quality from dairy discharges, and it is missing from the current proposed revisions to the monitoring program and its implementing work plan.

¹ The program's wells measure first-encountered groundwater, making the impact of historical management practices much less relevant. Analyzing the change in contaminant levels between the upgradient and downgradient wells accounts for any background contamination that may be present in order to isolate the contribution of the dairy.

Additionally, the Board could accelerate its ability to make adjustments and fine tune the effectiveness of its monitoring program and its compliance enforcement abilities by requiring through the RMP that all participating dairies identify and report which management practices they are using and what kind of hydrological environment they are situated in, now, not six years from now. The Board should incorporate that information together with monitoring results to make decisions in real time to issue permeability standards for various categories of dairies utilizing particular combinations of practices in particular hydrological environments. We reiterate, the Board does not need to wait an additional six years before beginning such a process. Furthermore, where this information demonstrates that impermissible degradation or pollution is occurring, *i.e.*, that particular participating dairies are engaging in practices that are known not to protect water quality in a vulnerable environments, the Board should issue enforcement actions against those dairies in real time, not six years from now. In fact, it is illegal under Porter-Cologne and the Basin Plans for the Board *not* to do this.

8. Additional Technical Concerns

The concerns above constitute the bulk of our feedback on the proposed RMP. In addition, there are several smaller technical concerns that we want to raise with the content of the RMP. Below are various quotes from the document, followed by our responses and questions.

On Page 3:

“Groundwater monitoring efforts will target the uppermost zone of first encountered groundwater beneath three distinct management units, *i.e.*, the liquid manure storage ponds, corrals, and manure applied forage fields.”

Saline water is more dense than clean water. Therefore, saline water tends to sink. If monitoring wells are only screened to monitor the upper portion of an aquifer, the most saline water may be missed and the sample would not be representative of the condition of the aquifer. Of course, the proposed RMP does not monitor for EC, which we think is a significant oversight.

“Traditional regulated units are designed to not recharge groundwater, whereas irrigated agriculture depends on sufficient leaching of salt residue beyond the crop root zone to avoid increasing soil salinity and associated soil degradation and crop losses (and some recharge is also expected from corrals and liquid manure storage ponds).”

This is a critical comment since the area being discussed is an area with highly permeable soils and shallow groundwater. Applying pollutants to highly permeable soils with shallow groundwater while intentionally leaching salts from the root zone will undoubtedly result in additional pollution migrating to groundwater.

“Typically, constituents of concern related to traditional regulated units are not commonly found in natural groundwater systems (e.g., petroleum products), and a

detection in a downgradient well provides evidence that the regulated unit leaks (given that this constituent is not detected in the upgradient well). This is in contrast to irrigated agriculture, where constituents of concern (i.e., mainly nitrate and other salts) are ubiquitous in groundwater systems.”

This should not have any bearing or consequence on the program. Regardless of the background level of contaminants in the groundwater, if downgradient wells show an increase in the level of contamination compared to wells upgradient of the facility, then the discharger has affected the quality of the water. The potential for upgradient presence of constituents of concern (at lower concentrations than downgradient) should not distract from the basic question at hand, which is whether the facility degrades or pollutes state waters, or not. In taking enforcement action against a wastewater treatment plant, the Regional Board requires the Discharger to prepare a corrective action plan, typically under an enforcement action, but ultimately the responsibility of compliance – including determining the source of pollution – lies with the Discharger. The monitoring program should simply determine overall compliance: does a dairy degrade or pollute groundwater?

“Groundwater sampling should occur in the upper few feet of the groundwater column to avoid mixing of (younger) groundwater originating under the targeted management unit with (older) groundwater from source areas upgradient of the targeted management unit.”

This would only occur in an aquifer that has great depth (where depth means the thickness of the aquifer). Most of the shallow (first encountered) groundwater aquifers are not hundreds of feet thick. In an aquifer approximately 10 feet thick, for example, it would be difficult to separate the “older” water from the “newer” water. A critical point here is that different pollutants have different densities. Some will tend to float and some will tend to sink based on their relative density. We would be more concerned about accurate pollutant concentration sampling than the age of the water. This accounts for the difference between monitoring to determine compliance and to determine the impacts of recent actions by the discharger.

“As a corollary to the above, the concept of comparing downgradient to upgradient groundwater quality as a means to determine potential groundwater degradation loses its utility in recharge-dominated systems.”

Comparing upgradient and downgradient waters to determine the impacts of a wastewater discharge must account for all the waters and constituent loading rates. Such accounting does not lose its utility in recharge-dominated systems, but is in fact the only means of determining whether the Discharger complies with the terms of its permit.

Finally, we note that the repeated mention of the contribution of historical operations and practices raises serious concerns for us. It paints a scenario in which even if groundwater quality is found to be degraded by the facility, the discharger could argue that it is a result of past practices, not

current ones, and that therefore, no management changes should be required. This could theoretically go on forever. The emphasis on historical analysis is also completely unnecessary based on the coalition's own claims about the dairies to be monitored. The proposal claims to have chosen dairies for Phase 1 monitoring that are present in "those areas in the Central Valley where high groundwater nitrogen and salt concentrations are thought to be substantially attributable to dairy operations and where *changes in water quality are most likely to be detected quickly due to adoption of management practices* required by the General Order" (emphasis added).

Conclusion:

We urge the Board to incorporate our recommendations into the workplan prior to adoption.

Sincerely,



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