Additional Details on Agricultural Expert Panel Questions 3, 4 and 11

The Agricultural Expert Panel (Panel) has requested further clarification on questions 3, 4, and 11 pertaining to surface water. The following brief is in an effort to provide that requested information.

Questions 3 and 4 were presented to the panel as follows:

> *Vulnerability and Risk Assessment*
>
> *Regulatory programs are most effective when they are able to focus attention and requirements on those discharges or dischargers (i.e. growers) that pose the highest risk or threat because of the characteristics of their discharge or the environment into which the discharge occurs. The various Irrigated Lands Regulatory Program (ILRP) orders issued throughout the state by the Regional Water Boards have taken different approaches in their prioritization schemas, some using specific criteria or methodologies, others utilizing measurements of previous known impacts.*
>
> *…*
>
> 3. *How can risk to or vulnerability of surface water best be determined in the context of a regulatory program such as the ILRP?*
> 4. *Evaluate and develop recommendations for the current approaches taken to assessing risk to or vulnerability of surface water:*
>   a. *Proximity to impaired water bodies.*
>   b. *Usage of particular fertilizer or pesticide materials.*
>   c. *Size of farming operation.*
>   d. *High Vulnerability Areas Methodology (as developed by the Central Valley Regional Water Board in a series of Waste Discharge Requirements issued to agricultural coalitions in the ILRP)*

Additional Details on Agricultural Expert Panel Question Numbers 3, 4 and 11

Upon researching this brief it was determined that one suggested revision to part d of question 4 was inadvertently omitted and it should have been presented as follows:

> *4. d. High Vulnerability Areas Methodology (for sediment/erosion risk)/Surface Water Quality Management Plan requirements (as developed by the Central Valley Regional Water Board in a series of Waste Discharge Requirements issued to agricultural coalitions in the ILRP)*

Questions presented to the Panel are derived from two sources: (1) The State Water Board's *Recommendations Addressing Nitrates in Groundwater*, State Water Board's Report to the Legislature, February 20, 2013, and (2) State Water Board Order WQ 2013-0101. While the former was focused on nitrates in groundwater, the later also included some questions for the Panel regarding surface water.

Below is the quoted section from Order WQ-2013-0101(pages 17-20) pertaining to vulnerability and risk in the context of establishing Tiering Criteria.

> ***C. Reasonableness of Tiering Criteria, Provisions 13-21***
> *The Agricultural Order assigns each discharger to one of three "tiers," which determine the requirements applicable to the discharger. The tier designations are based on a number of criteria intended to capture the risk posed by the operation to water quality, including whether the discharger uses the pesticides chlorpyrifos or diazinon, proximity of discharger's farm to a surface waterbody listed as impaired for toxicity, pesticides, nutrients, turbidity or sediment,[44] and whether the discharger grows crop types with high potential to discharge nitrogen to groundwater.[45]*
>
> *Specifically, a discharger is classified as a Tier 3 discharger – the tier expected to pose the highest threat to water quality – if (a) the discharger grows crop types with high potential to discharge nitrogen to groundwater and the farm total irrigated acreage is 500 acres or more, or (b) the discharger applies chlorpyrifos or diazinon at the farm, and the farm discharges irrigation or storm water runoff to a waterbody listed as impaired for toxicity or pesticides.*
>
> *On the other hand, a discharger is classified as a Tier 1 discharger – the lowest threat tier – if (a) if the discharger does not use chlorpyrifos or diazinon at the farm; and (b) the discharger's farm is located more than 1,000 feet from a surface waterbody listed as impaired for toxicity, pesticides, nutrients, turbidity, or sediment; and (c) the discharger either does not grow crop types with high potential to discharge nitrogen to groundwater or, if the discharger does grow such crops, the farm has less than 50 acres of total irrigated area and is not within 1,000 feet of a well that is part of a public water system that exceeds the maximum contaminant level (MCL) for nitrogen-related pollutants. Additionally, a*

discharger is classified as Tier 1 if the farm is certified by Sustainability in Practice (SIP), a sustainable agriculture program certified by a group of Central Coast vineyards, or a similar certified sustainable agriculture program approved by the Executive Officer of the Central CoastWater Board.

Dischargers that do not meet the criteria for Tier 1 or Tier 3 are classified as Tier 2 dischargers.[46]

Consistent with the expectation of threat to water quality, Tier 3 dischargers must comply with more stringent requirements than Tier 2 dischargers. Tier 2 dischargers, in turn, must meet more stringent requirements than Tier 1 dischargers. For example, while dischargers in all three tiers must prepare Farm Plans, only Tier 2 and Tier 3 dischargers are subject to annual reporting on their practices. And only Tier 3 dischargers are required to conduct and report individual surface water discharge monitoring.

The Agricultural Petitioners argue that the tiering criteria used by the Central CoastWater Board do not necessarily correlate to risk to water quality and are therefore arbitrary. They argue, for example, that there may be farms smaller than 50 acres that pose a greater risk to water quality than larger farms.[47] *They posit that some farms using diazinon and chlorpyrifos may have no discharges to surface water.*[48] *They point out that the tiers do not capture the geology of a farm's soil or the depth to groundwater, both of which affect impacts to groundwater.*[49] *They argue that the management and cultural practices of certain commodities may be a better indicator of threat to water quality than the physical characteristics of the farms.*[50] *But the Agricultural Petitioners do not appear to be advancing a proposed, well- defined, alternative, and they are not advocating for uniform requirements for all dischargers.*

The Central CoastWater Board chose to use a general order in the form of a conditional waiver, rather than farm-specific orders, to regulate agricultural discharges. The StateWater Board supports the use of a general order given the general similarity of operations and discharges for the agricultural community in the Central Coast and in particular the considerations of efficiency in regulating a large number of dischargers. A general order necessitates either a one-size-fits-all approach or a scheme for grouping the dischargers into different categories to enable assigning different requirements. With as many farms as are covered by the Agricultural Order, it is no surprise that the categories chosen by the Central CoastWater Board may not fit each circumstance perfectly. The question for the StateWater Board is not whether the Central CoastWater Board's criteria capture the risk level posed by each farm with perfect accuracy, but, rather, whether the Board chose rational distinctions between the farms to create those different categories.

We recognize that the tiering approach used by the Central CoastWater Board was not the only reasonable option available to it. There are numerous factors that determine the threat a given farm will pose to water quality and multiple variations on how those factors may be organized to provide a reasonable framework for assigning the farm to a risk category. Moreover, while the Central Coast Water Board utilized an approach based on individual farm characteristics, the Board could instead have chosen an approach based on regional characteristics, where dischargers are placed in a higher risk category commensurate with the vulnerability of the groundwater in the larger geographic area rather than individual farm characteristics.[51]

Yet, while the approach that was ultimately chosen by the Central CoastWater Board may not be perfect, it is a reasonable approach based on the evidence in the record[52] *and based on a rationale articulated in the staff reports and responses to comments supporting the Agricultural Order.*[53] *For example, the criteria make distinctions in risk to water quality based on use of pesticides that are currently documented as a primary cause of toxicity in the Central Coast region.*[54] *As another example, with regard to farms growing crops with high potential to discharge nitrogen, the Central Coast Water Board analyzed the impact of size of the farm on such potential and explained that the numbers less than 50 acres and more than 500 acres were chosen as the thresholds for placing a discharger in Tiers 1 or 3 respectively because 50-500 acres represented an average loading appropriate for Tier 2 categorization.*[55] *The Board further articulated that, regardless of size, proximity of a farm to a public water system polluted by nitrate should trigger Tier 2 requirements consistent with proximal distances recommended by the Department of Public Health for source water assessment and protection.*[56] *The Central Coast Water Board also pointed out that the particular tiering criteria were selected in part because they reflect already available information and do not require additional data collection or complicated or expensive site evaluations.*[57] *Finally, the Central CoastWater Board included provisions that allow the Executive Officer to adjust the tier for any given farm, which helps ameliorate any potentially unreasonable result of the tiering scheme.*

We are reluctant to substitute another reasonable, but imperfect, set of criteria for those selected by the Central CoastWater Board. Further, we will ask the Expert Panel to evaluate the selection of appropriate indicators of risk to water quality as one of the long-term, state-wide issues it considers. Accordingly, in the short-term, we will not disturb the tier structure set out in the Agricultural Order.

[44] Relevant Central Coast region waterbodies are listed in Table 1 of the Agricultural Order based on the 2010 Clean Water Act Section 303(d) List of Impaired Waterbodies.

[45] The definitions section of the Agricultural Order specifies the crop types with high potential to discharge nitrogen to groundwater. (Agricultural Order, Att. A., Part C, & Prov. 10.)

[46] In general, the following categories of dischargers will be in Tier 2: dischargers that apply chlorpyrifos or diazinon at the farm, but do not discharge to a waterbody listed as impaired for toxicity or pesticides; dischargers with farms located within 1000 feet of a surface waterbody listed for impairment for toxicity, pesticides, nutrients, turbidity, or sediment, or dischargers that grow crop types with high potential to discharge nitrogen to groundwater and that are 50 acres or more but less than 500 acres or are within 1000 feet of a public water well that exceeds the MCL for nitrogen-related pollutants.

[47] Petition for Review of Farm Bureau et al. (Apr. 16, 2012) (Farm Bureau Petition), p. 67; Grower-Shipper Petition, p. 37, Request for Stay and Petition for Review of Ocean Mist and RC Farms (Apr. 16, 2012) (Ocean Mist Petition), p. 24. Ocean Mist appears to have misinterpreted the tiering criteria on this issue. Size is relevant to tiering only to the extent the farm already grows crops that have high potential to discharge nitrogen to groundwater.

[48] Grower-Shipper Petition, p. 37.

[49] Petition to Review of Jensen (Apr. 13, 2012), pp. 18-20.

[50] Grower-Shipper Petition, p. 36.

[51] This type of approach is utilized by the Central ValleyWater Board in waste discharge requirements issued to growers in the Eastern San Joaquin River Watershed. (Order R5-2012-0116, <http://www.swrcb.ca.gov/rwqcb5/board_decisions/adopted_orders/general_orders/r5-2012-0116.pdf> [as of Jun. 4, 2013].) For illustrative purposes, we take official notice of the Central Valley Water Board's order (Cal. Code Regs., tit. 23, § 648.2 and Evid. Code, § 452, subd. (c)), although we express no opinions here on the merits of its approach.

[52] Such evidence includes, but is not limited to, the following: AR Reference Nos. 35, 47, 72, 74, 75, 132, 133, 134, 137, 145, 146, 147, 148, 149, 165, 226, 227, 228, & 258.

[53] AR File Nos. 228, pp. 21-27; 232, pp. 6-16; 233; 260.

[54] See discussion of toxicity related to chlorpyrifos and diazinon at AR File No. 228, p. 23.

[55] See AR File Nos. 260, slides 18-23; 265, pp. 586-591; 283, p. 25.

[56] See AR File No. 228, p. 26.

[57] *Id.*, p. 22.

Any deliberation on questions 3 and 4 should also be informed by language contained in the Central Valley Water Board's Orders for the Irrigated Lands Regulatory Program. Below are excerpts from Order R5-2012-0166-r1:

> *Findings*
>
> *23 The surface water quality monitoring and trend groundwater quality monitoring under this Order are regional in nature instead of individual field discharge monitoring. The benefits of regional monitoring include the ability to determine whether water bodies accepting discharges from numerous irrigated lands are meeting water quality objectives and to determine whether practices, at the watershed level, are protective of water quality. However, there are limitations to regional monitoring's effectiveness in determining possible sources of water quality problems, the effectiveness of management practices, and individual compliance with this Order's requirements.*
>
> *Therefore, through the Management Practices Evaluation Program and the Surface Water Quality Management Plans and Groundwater Quality Management Plans, the third-party must evaluate the effectiveness of management practices in protecting water quality. In addition, Members must report the practices they are implementing to protect water quality.*

Through the evaluations and studies conducted by the third-party, the reporting of practices by the Members, and the board's compliance and enforcement activities, the board will be able to determine whether a Member is complying with the Order.

Where required monitoring and evaluation does not allow the Central Valley Water Board to determine potential sources of water quality problems or identify whether management practices are effective, this Order requires the third-party to provide technical reports at the direction of the Executive Officer. Such technical reports are needed when monitoring or other available information is not sufficient to determine the effects of irrigated agricultural waste discharges to state waters. It may also be necessary for the board to conduct investigations by obtaining information directly from Members to assess individual compliance. (page 7)

III. Receiving Water Limitations

A. Surface Water Limitations[15]

1. Wastes discharged from Member operations shall not cause or contribute to an exceedance of applicable water quality objectives in surface water, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance. (page 17)

[15] These limitations are effective immediately except where Members are implementing an approved Surface Water Quality Management Plan (SQMP) for a specified waste parameter in accordance with an approved time schedule authorized pursuant to sections VIII.H and XII of this Order.

VII. Required Reports and Notices – Member

C. Sediment and Erosion Control Plan

The requirements and deadlines of this section apply as specified to Members that are required to develop a Sediment and Erosion Control Plan per section IV.B.7 of this Order. The Member must use the Sediment and Erosion Control Plan Template approved by the Executive Officer (see section VIII.C below), or equivalent. The Sediment and Erosion Control Plan must be prepared in one of the following ways:

- *The Sediment and Erosion Control Plan must adhere to the site-specific recommendation from the Natural Resources Conservation Service (NRCS), NRCS technical service provider, the University of California Cooperative Extension, the local Resource Conservation District; or conform to a local county ordinance applicable to erosion and sediment control on agricultural lands. The Member must retain written documentation of the recommendation provided and certify that they are implementing the recommendation; or*

- *The Sediment and Erosion Control Plan must be prepared and self-certified by the Member, who has completed a training program that the Executive Officer concurs provides necessary training for sediment and erosion control plan development; or*

- *The Sediment and Erosion Control Plan must be written, amended, and certified by a Qualified Sediment and Erosion Control Plan Developer possessing one of the following registrations or certifications, and appropriate experience with erosion issues on irrigated agricultural lands: California registered professional civil engineer, geologist, engineering geologist, landscape architect; professional hydrologist registered through the American Institute of Hydrology; certified soil scientist registered through the American Society of Agronomy; Certified Professional in Erosion and Sediment Control (CPSEC)™/Certified Professional in Storm Water Quality (CPSWQ)™ registered through Enviro Cert International, Inc.; professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET); or*

- *The Sediment and Erosion Control Plan must be prepared and certified in an alternative manner approved by the Executive Officer. Such approval will be provided based on the Executive Officer's determination that the alternative method for preparing the Sediment and Erosion Control Plan meets the objectives and requirements of this Order.*

The plan shall be maintained and updated as conditions change. A copy of the Sediment and Erosion Control Plan shall be maintained at the farming operations headquarters or primary place of business; and must be produced by the Member, if requested, should Central Valley Water Board staff, or an authorized representative, conduct an inspection of the Member's irrigated lands operation.

1. ***Deadline for Members with Small Farming Operations***

   Within one (1) year of the Executive Officer accepting the third party's Sediment Discharge and Erosion Assessment Report, Members with Small Farming Operations must complete and implement a Sediment and Erosion Control Plan.

2. ***Deadline for all Other Members[20]***

   Within 180 days of the Executive Officer accepting the third party's Sediment Discharge and Erosion Assessment Report, all other

Members must complete and implement a Sediment and Erosion Control Plan. (pages 25-26)

[20] Members with parcels that do not meet the Small Farming Operation definition (see Attachment E).

VIII. Required Reports and Notices – Third-Party
F. Surface Water Exceedance Reports

The third-party shall provide exceedance reports if surface water monitoring results show exceedances of adopted numeric water quality objectives or trigger limits, which are based on interpretations of narrative water quality objectives. Surface water exceedance reports shall be submitted in accordance with the requirements described in section V.D of the MRP. (page 32)

Attachment A – Information Sheet
Sediment and Erosion Control Plans

The Order requires that Members with the potential to cause erosion and discharge sediment that may degrade surface waters prepare a sediment and erosion control plan. Control of sediment discharge will work to achieve water quality objectives associated with sediment and also water quality objectives associated with sediment bound materials such as pesticides. To ensure that water quality is being protected, this Order requires that sediment and erosion control plans be prepared in one of the following ways:

- *The sediment and erosion control plan must adhere to the site-specific recommendation from the Natural Resources Conservation Service (NRCS), NRCS technical service provider, the University of California Cooperative Extension, the local Resource Conservation District; or conform to a local county ordinance applicable to erosion and sediment control on agricultural lands. The Member must retain written documentation of the recommendation provided and certify that they are implementing the recommendation; or*

- *The plan must be prepared and self-certified by the Member, who has completed a training program that the Executive Officer concurs provides necessary training for sediment and erosion control plan development; or*

- *The plan must be written, amended, and certified by a qualified sediment and erosion control plan developer possessing one of the registrations shown in Table 3 below; or*

- *The plan must be prepared and certified in an alternative manner approved by the Executive Officer. Such approval will be provided based on the Executive Officer's determination that the alternative method for preparing the plan meets the objectives and requirements of this Order.*

Table 3. Qualified Sediment and Erosion Control Plan Developers

Title/Certification	*Certifier*
Professional Civil Engineer	*State of California*
Professional Geologist or Engineering Geologist	*State of California*
Landscape Architect	*State of California*
Professional Hydrologist	*American Institute of Hydrology*
Certified Professional in Erosion and Sediment Control™ (CPESC)	*Enviro Cert International Inc.*
Certified Professional in Storm Water Quality™ (CPSWQ)	*Enviro Cert International Inc.*
Certified Soil Scientist	*American Society of Agronomy*

The sediment and erosion control plan will: (1) help identify the sources of sediment that affect the quality of storm water and irrigation water discharges; and (2) describe and ensure the implementation of water quality management practices to reduce or eliminate sediment and other pollutants bound to sediment in storm water and irrigation water discharges. The plan must be appropriate for the Member's operations and will be developed and implemented to address site specific conditions. Each farming operation is unique and requires specific description and selection of water quality management practices needed to address waste discharges of sediment. The plan must be maintained at the farming operations headquarters or primary place of business. The Order requires development of a sediment and erosion control plan template to assist Members and qualified developers in completing the plan. The Order establishes prioritization for Member completion of the plan based on farm size. Small farming operations will have additional time to complete the plan.

To assist Members in determining whether they need to prepare a sediment and erosion control plan, the third-party must prepare a sediment and erosion control assessment report that identifies the areas susceptible to erosion and the discharge of sediment that could impact receiving waters. In addition, the Executive Officer may identify areas requiring such plans based on evidence of ongoing erosion or sediment control problems. (Attachment A pages 23-24)

Additional Details on Agricultural Expert Panel Question Numbers 3, 4 and 11

Question 11 for the Panel is specifically from State Water Board Order WQ 2013-0101. The question was stated as:

> *Verification Measures*
>
> *Utilization of verification measures to determine whether management practices are being properly implemented and achieving their stated purpose is another key element to the success of a nonpoint source control program. Because of the nature of nonpoint source discharges, direct measurements are often difficult or impossible to obtain and other means of verifications may be required.*
>
> 11. *Evaluate the relative merits, and make recommendations regarding the usage of, surface water measurement systems derived from either receiving water or a discharge monitoring approach to identify problem discharges.*

Excerpts from the State Water Board Order WQ 2013-0101(page 37-38) pertaining to this question are as follows:

> *We are skeptical that the Central Coast Water Board has adopted the monitoring program best suited to meet the purpose of identifying and following up on high-risk discharges. The variability in the composition of end-of-field discharges makes it difficult to characterize such discharges through sampling at a limited number of locations and in a limited number of sampling events. Further, even though the surface water discharge monitoring requirements are targeted to the highest risk dischargers, problem discharges and areas are likely to be found outside of the influence of farms operated by Tier 3 dischargers. The better approach may be to rely on receiving water monitoring data and to require the third party monitoring groups administering receiving water monitoring to pursue exceedances with increasingly focused monitoring in upstream channels designed to narrow down and identify the sources of the exceedances. Although the Agricultural Order's surface receiving water monitoring contemplates that the Executive Officer may approve additional monitoring sites to "better assess the pollutant loading from individual sources"[90] or may require toxicity evaluation "to identify the individual discharges causing the toxicity,"[91] it does not establish the type of comprehensive process necessary to identify and address problem discharges. The surface receiving water monitoring approach recently approved by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) for growers in the Eastern San Joaquin Watershed, where a detected exceedance may trigger source identification, management practice*

implementation, and follow up reporting,[92] *perhaps more closely matches the type of monitoring that would assure pollutant discharges are actually addressed.*

We will ask the Expert Panel to consider both the receiving water and discharge monitoring approaches to identification of problem discharges.

[90] Tiers 1-3 MRPs, Part 1, § A.9.

[91] *Id.* at Part 1, § A.13.

[92] Central Valley Water Board Order R5-2012-0116, Appendix MRP-1.