

## Attachment 1

### Resolution No. R5-2013-00XX

#### Amendment to Basin Plan to Establish a Drinking Water Policy for Surface Waters of the Delta and Its Upstream Tributaries

The proposed changes to the Basin Plan are as follows. Text additions to the existing Basin Plan language are underlined and *italicized*. Modify the Basin Plan under the heading, “Water Quality Objectives for Inland Surface Waters” (page III-3.00), as follows:

##### **Cryptosporidium and Giardia**

*Waters shall not contain Cryptosporidium and Giardia in concentrations that adversely affect the public water system component<sup>1</sup> of the MUN beneficial use. This narrative water quality objective for Cryptosporidium and Giardia shall be applied within the Sacramento-San Joaquin Delta and its tributaries below the first major dams (shown in Appendix X) and should be implemented as specified in Section IV of the Basin Plan. Compliance with this objective will be assessed at existing and new public water system intakes.*

Add footnote for existing Chemical Constituents narrative objective:

Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.\*

*\*This includes drinking water chemical constituents of concern, such as organic carbon.*

Modify the Basin Plan under the heading, “Water Quality Concerns” (page IV-1.00), as follows:

##### **8. Drinking Water Policy**

*The Regional Water Board supports protection of the MUN beneficial use in surface waters of the Sacramento-San Joaquin Delta and its tributaries. The Delta provides drinking water to over 25 million people in the Southern California, Central Valley, Central Coast, and San Francisco Bay regions, and several million people obtain their water supply from the tributaries of the Delta. The tributaries of the Sacramento and San Joaquin Rivers that originate in the Cascades and Sierra Nevada Mountains generally have high water quality. However, as the tributaries flow into lower elevations, they are affected by natural processes, urban, industrial, and agricultural land uses, and a highly managed water supply system. This Policy pertains to the following drinking water constituents of concern: organic carbon, Cryptosporidium, Giardia, salt and*

---

<sup>1</sup> Public water system as defined in Health and Safety Code, section 116275, subdivision (h)

nutrients. Work on the Policy was initiated in 2000 in response to concerns that these constituents might pose significant drinking water risks and result in significant additional treatment costs for water agencies due to the potential increased loading as a result of population growth in the watershed. Source control evaluations conducted in 2011 show that the load of organic carbon and nutrients will not likely increase in the future as a result of current regulatory actions. Monitoring of Cryptosporidium at public water system intakes from 2006 to 2011, as required by USEPA regulations, has not resulted in additional treatment requirements for public water systems treating water from the Delta and its tributaries. The Cryptosporidium and Giardia narrative objective and associated implementation program are to maintain existing conditions for public water systems, to comply with the Policy with Respect to Maintaining High Quality of Water in California and the Antidegradation Implementation Policy.

Other elements of the Drinking Water Policy include the following:

- The Basin Plan contains the following elements that address the protection of the MUN beneficial use:
  - All water quality objectives are developed to protect the MUN beneficial use unless otherwise stated. The Basin Plan also includes specific narrative and numeric objectives to protect the MUN beneficial use.
  - The existing narrative water quality objective for chemical constituents includes drinking water chemical constituents of concern, such as organic carbon.
  - The Implementation Chapter of the Basin Plan contains the following Policies relevant to the protection of the MUN beneficial use:
    - Resolution No. 68-16, Policy with Respect to Maintaining High Quality of Water in California (IV – 8.00).
    - Resolution No. 88-63, Sources of Drinking Water Policy (IV – 9.00).
    - Antidegradation Implementation Policy (IV – 15.01).
    - Policy for Application of Water Quality Objectives (IV – 16.00).
    - Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California; a.k.a. State Implementation Plan or SIP (IV-26.02)
  - Continued coordinated monitoring and modeling of the identified drinking water constituents of concern is necessary to confirm that concentrations will not likely increase to levels that adversely affect beneficial uses. Monitoring completed to support the implementation of the Drinking Water Policy shall be coordinated with other monitoring programs already in place as well as the Delta Regional Monitoring Program. The Delta Regional Monitoring Program is a Regional Water Board initiated stakeholder effort to address the need for a comprehensive monitoring, assessment and reporting program.

- To further protect the public health, drinking water utilities employ a multi-barrier approach to control contaminants that includes source water protection, water treatment, and protection of distribution system water quality.
- Source evaluations based on 2011 permit conditions for publically owned treatment works, urban runoff, and irrigated agriculture, indicate that concentrations of organic carbon at public water system intakes are not expected to increase over time.
- Drinking water constituents of concern shall continue to be considered when NPDES facilities conduct their Antidegradation analysis.
- If there are significant changes to the characteristics of the project area, drinking water treatment standards based on source water quality, or knowledge regarding drinking water constituents of concern, the Central Valley Water Board may consider the need to reevaluate the Drinking Water Policy. The Drinking Water Policy will be reviewed by the Regional Water Board in 2023 to determine if the provisions should be revised.
- The Regional Water Board supports and recognizes the importance of USEPA's efforts to refine analytical methods to measure Cryptosporidium and Giardia in water.
- The Regional Water Board supports refinement of analytical modeling efforts to improve understanding of the fate and transport of drinking water constituents of concern.
- It is appropriate to use Cryptosporidium concentrations as an indicator of compliance with the Cryptosporidium and Giardia objective since Cryptosporidium is not as readily treated as Giardia when conventional drinking water treatment processes are employed, and USEPA promulgated new drinking water requirements specifically to address Cryptosporidium

Modify the Basin Plan under the heading, "Control Action Considerations of the Central Valley Regional Water Board" (page IV-16.00), as follows:

**8. Drinking Water Policy Implementation**

As a part of the Drinking Water Policy, a narrative objective has been established for Cryptosporidium and Giardia to protect the public water system component of the MUN beneficial use. Although it is unclear what levels of Cryptosporidium and Giardia will impair this use, the goal of implementation is to maintain existing levels of pathogens at public water system intakes. This will be achieved by addressing controllable sources that are shown to cause or substantially contribute to Cryptosporidium levels increasing to the trigger level of the next highest bin classification. In accordance with the USEPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), public water systems are required to monitor for Cryptosporidium at their intakes; the monitoring results are used to establish the bin classification for the water system. To assure that Cryptosporidium levels at public water systems stay within the range of their existing bin classifications, triggers at public water system intakes are included below based on USEPA LT2ESWTR bin classifications. The triggers and the changes to LT2ESWTR bin levels do not indicate a violation of the narrative water quality objective for Cryptosporidium and Giardia nor are the triggers and the LT2ESWTR bin levels to be used for numeric effluent limits. Instead, the proposed numeric triggers may prompt action by the Regional Water Board.

**Cryptosporidium Ambient Trigger Exceedance**

If Cryptosporidium monitoring data from an existing public water system intake indicate that the maximum running annual average<sup>2</sup> has reached 80 percent of the next highest bin, as existed in 2013, the affected public water system may request that the Regional Water Board initiate the investigation described below and shown in Figure IV-1. Table IV-x shows the 2013 LT2ESWTR bin classifications and the 80 percent trigger levels.

**Table IV-x. Bin Levels and 80 Percent Triggers**

<b>Bin Classification</b>	<b>Maximum Running Annual Average (oocysts/L)</b>	<b>80 Percent Trigger (oocysts/L)</b>
1	< 0.075	0.06
2	0.075 to < 1.0	0.80
3	1.0 to < 3.0	2.40

If the affected public water system requests assistance, the Regional Water Board should coordinate with CDPH, the affected public water system and potential sources (e.g., storm water management entities, wastewater treatment or wetland managers,

<sup>2</sup> Maximum Running Annual Average as defined in USEPA Long Term 2 Enhanced Surface Water Treatment Rule

etc.) to assess the data and evaluate the need to conduct source evaluations and implement control options. The affected public water system may decline assistance from the Regional Water Board in addressing their compliance with the LT2ESWTR. The coordination and investigation effort should include the steps represented by the schematic overview in Figure IV-1.

#### Antidegradation Analysis

In addressing Cryptosporidium and Giardia in an antidegradation analysis for evaluating the public water system component of the MUN beneficial use, the monitoring results of the nearest impacted public water system intake shall be considered. In cases where a trigger (Section IV) at the nearest public water system intake has not been exceeded, the analysis should be simplified and may be curtailed, depending on the magnitude of the discharge in question and the likelihood of potential impact at public water system intakes. If a trigger has been exceeded, information from the resulting investigation should be considered in the antidegradation analysis.

#### Reasonable Potential

The Regional Water Board evaluated data representing 2013 conditions. An evaluation of this data indicates that the narrative water quality objective for Cryptosporidium and Giardia is being attained in surface waters at all public water system intakes in the Delta and its tributaries. The triggers and the changes between LT2ESWTR bin levels do not indicate a violation of the narrative water quality objective for Cryptosporidium and Giardia nor are the triggers and the LT2ESWTR bin levels to be used for numeric effluent limits.

The Regional Water Board will determine reasonable potential in accordance with the applicable state and federal regulatory requirements. For NPDES permittees, the numeric triggers as applied at the public water system intakes are part of the Regional Water Board's procedures under 40 CFR § 122.44(d)(1)(ii) for determining whether a discharge has reasonable potential. At the request of an affected public water system, implementation of the trigger provisions described in (Figure IV-1, flowchart) will help to ensure that management measures prevent violations of the narrative objective. As a result, NPDES dischargers are not expected to have a reasonable potential to cause or contribute to an excursion above the narrative objective, and NPDES permits are not expected to include effluent limitations to implement the narrative objective.

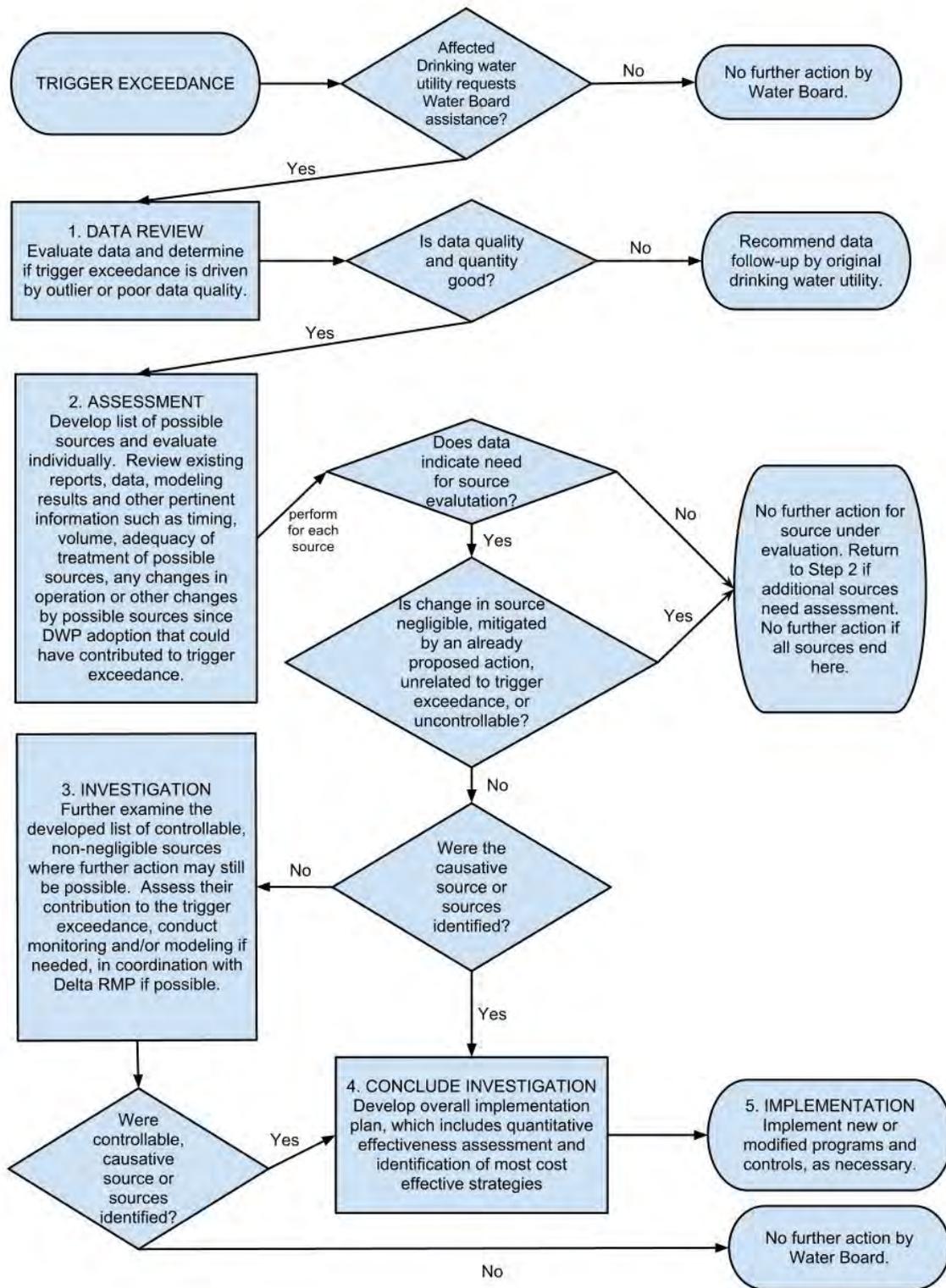


Figure IV-1: Schematic Overview of Actions prompted by *Cryptosporidium* Trigger Exceedance

Modify the Basin Plan under the heading, "Estimated Costs of Agricultural Water Quality Control Programs and Potential Sources of Funding" (page IV-39.00), as follows:

**Drinking Water Policy**

The total estimated costs to implement management practices, if necessary, range from zero to approximately \$6.8 million (2013 dollars).

Potential funding sources include:

1. Those identified in the San Joaquin River Subsurface Agricultural Drainage Control Program and Pesticide Control Program.

Modify the Basin Plan under the heading, "Surveillance and Monitoring" (page V-5.00), as follows:

### **Drinking Water Policy**

Monitoring and surveillance for the Drinking Water Policy consists of two elements.

#### **Cryptosporidium and Giardia Monitoring**

It is not the intent of the Drinking Water Policy to require routine effluent monitoring for Cryptosporidium and Giardia. Rather, the Regional Water Board should work with interested stakeholders to gather data that could be used to help identify potential sources if Cryptosporidium levels increase to the trigger level (in Section IV) at an existing public water system intake in the future. This one-time Cryptosporidium special study could be conducted through the Delta Regional Monitoring Program or through another coordinated effort between dischargers, drinking water suppliers, and state agencies. The study will characterize ambient background conditions and potential sources to be used when and if exceedance of a trigger occurs. The study is envisioned to last two years targeting the period of Long Term 2 Enhanced Surface Water Treatment Rule second round monitoring. The study may consist of the following elements:

- Literature review to identify available source information
- Continued monitoring at existing public water systems intakes
- Monitoring at several ambient locations that will be identified as sites that integrate the pathogen sources where historic pathogen data are unavailable
- Monitoring at several representative discharge locations, if representative pathogen concentrations are not available or if coordinated data are necessary
- Hydrodynamic and particle tracking models to simulate the transport of pathogens from potential sources to public water system intakes
- If needed, focused studies to identify the viability and fate and transport of Cryptosporidium.

A report documenting the results of the special study should be prepared.

#### **Organic carbon, salinity, and nutrients**

As waste discharge requirements are renewed, the Regional Water Board should consider the necessity for inclusion of monitoring of organic carbon, salinity, and nutrients. This consideration should include a combination of the following:

1. The location with respect to drinking water intakes.
2. The importance of the load based on available information.
3. Whether the information exists that the load has significantly increased.
4. Importance of data to management decisions to protect drinking water.

*For general permits, agriculture and small dischargers (smaller than 5 mgd), careful consideration should be made as to whether monitoring for these constituents is necessary.*

*Where water quality monitoring is performed to evaluate management practices to control other constituents, the Regional Water Board recommends monitoring of organic carbon, salinity, and nutrients be considered to evaluate the influence on drinking water quality.*

Add the following map as an appendix to the Basin Plan.

