Staff Workshop

PART 3 OF THE WATER QUALITY CONTROL PLAN FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA—BACTERIA PROVISIONS AND A WATER QUALITY STANDARDS VARIANCE POLICY

AND

AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA—BACTERIA PROVISIONS AND A WATER QUALITY STANDARDS VARIANCE POLICY

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Workshop Purpose

- To provide the public an opportunity to informally discuss the Bacteria Provisions and the Staff Report
- To assist the public with formulating written comments
- To assist staff in appreciating and addressing the public’s comments

History

Clean Water Act directs U.S. EPA to promulgate standards when it determines that a new or revised standard is needed and to adopt water quality standards to protect the public health and welfare.

- In 2012 U.S. EPA issued new recommended Recreational Water Criteria for Bacteria
- The 2012 Recreational Water Criteria for Bacteria are for use by states and tribes in adopting water quality standards

Current Status

- Most Regional Water Board basin plans are currently inconsistent with the 2012 Recommended Recreational Water Criteria for Bacteria
- The State Water Board staff developed the Draft Bacteria Provisions to provide efficient and consistent implementation statewide
- The Draft Bacteria Provisions and a Draft Staff Report including the Draft Substitute Environmental Documentation are now available for public comment (released June 30, 2017)

2012 Recommended Recreational Water Criteria for Bacteria

1. Based on two bacteria indicators:
   - For Fresh Waters – *E. coli* and/or Enterococci
   - For Marine Waters – Enterococci only
2. Based on one of two proposed illness rates
3. Consist of a geometric mean value and a statistical threshold value (STV) not to be exceeded more than 10% of the time
4. Define a duration and frequency of sampling and exceedance

2012 Recommended Recreational Water Criteria

Criteria Elements	Estimated Illness Rate (NGI): 36 per 1,000 primary contact recreators			Estimated Illness Rate (NGI): 32 per 1,000 primary contact recreators	
	Magnitude			Magnitude	
Indicator	**GM (cfu/100 mL)**	**STV (cfu/100 mL)**	**OR**	**GM (cfu/100 mL)**	**STV (cfu/100 mL)**
Enterococci (marine and fresh)	35	130		30	110
OR					
***E. coli* – (fresh)**	126	410		100	320

NGI = NEEAR – GI illness, NEEAR = National Epidemiological and Environmental Assessment of Recreational Water
GM = geometric mean
STV = statistical threshold value cfu = colony forming units
mL = milliliters

Elements of the Bacteria Provisions

- Beneficial Use
  - Provides a limited water contact recreation (LREC-1) beneficial use definition.
- Water Quality Objectives
  - Applicable to waters with water contact recreation (REC-1) uses
  - Defines the applicable bacteria indicator, e.g. *E. coli*, Enterococci
  - Defines an illness rate
  - Defines an averaging period to determine compliance
- Implementation Provisions
  - Methods for addressing natural sources of bacteria within context of a TMDL
  - Method for suspension of the REC-1 use during high flows
  - Method for suspension of the REC-1 use during a specific season
- Water Quality Standards Variance

Beneficial Use

Limited REC-1

- A beneficial use that recognizes that body contact is limited in the waterbody due to physical conditions, such as restricted access and very low water depths

- Proposed definition:
  - Limited Water Contact Recreation (LREC-1): Uses of water that support limited recreational activities involving body contact with water, where the activities are predominantly limited by physical conditions such as very shallow water depth or restricted access and, as a result, body contact with water and ingestion of water is infrequent or insignificant.

Elements of the Water Quality Objective

Fresh Water Bacteria Indicator (where the salinity is less than 10 ppth 95 percent or more of the time)

- Proposing the use of *E. coli*
  - *E. Coli* is a better indicator than total and/or fecal coliform
  - Enterococci can give false positives in fresh waters

Estuarine Water Bacteria Indicator (where the salinity is equal to or greater than 10 ppth 95 percent or more of the time)

- Proposing the use of Enterococci
  - Only indicator recommended for saline waters

Elements of the Water Quality Objective

Marine Water Bacteria Indicator

- Proposing the use of Enterococci
  - Only indicator recommended for marine waters
- Proposing to eliminate objectives for total and fecal coliform in the Ocean Plan
  - Monitoring and beach notifications will still be required by AB 411 (Title 17 section 7958)

Elements of the Water Quality Objective

Illness Rate

- The expression of the illness rate has changed
  - The 1986 illness rate included only gastrointestinal illnesses with fever
  - The 2012 illness rate included gastrointestinal illnesses with or without fever
  - The 2012 Recommended Recreational Water Criteria for Bacteria contains two illnesses rates that are both protective of public health
- Proposing the use of U.S. EPA's estimated illness rate of 32 per 1,000 recreators for fresh, estuarine and marine waters
  - This is the slightly more conservative illness rate of the two recommended by U.S. EPA.
- As Lake Tahoe is a Outstanding Natural Resource Water we are proposing a illness rate that is comparable to its current illness rate.

Proposed REC-1 Bacteria Water Quality Objectives

Applicable Waters	Objective Elements	Estimated Illness Rate (NGI): 32 per 1,000 water contact recreators	
		Magnitude	
	Indicator	GM (cfu/100 mL)	STV (cfu/100 mL)
All waters, except Lake Tahoe, where the salinity is less than 10 ppth 95 percent or more of the time	*E. coli*	100	320
Lake Tahoe	*E. coli*	17	55
All waters, where the salinity is equal to or greater than 10 ppth 95 percent or more of the time	Enterococci	30	110

The waterbody GM shall not be greater than the applicable GM magnitude in any six-week interval, calculated weekly. The applicable STV shall not be exceeded more than 10 percent of the time, calculated monthly.

NGI = National Epidemiological and Environmental Assessment of Recreational Water gastrointestinal illness rate

GM = geometric mean
STV = statistical threshold value
cfu = colony forming units
mL= milliliters

ppth = parts per thousand

Elements of the Water Quality Objective

Averaging Period to Determine Compliance

- The geometric mean duration is proposed as a 6-week rolling geometric mean, calculated weekly
  - This allows for a significantly sufficient number of samples for calculating attainment of the water quality standard, while allowing for a quick reporting response

- The statistical threshold value (STV) is proposed to not be exceed more than 10 percent of the time, calculated monthly

Implementation Provisions – Natural Sources

- Proposing two approaches for addressing natural sources of bacteria levels within the context of a TMDL
  - Reference System/Antidegradation Approach
    - Bacteria water quality is at least as good as that of a natural (reference) system
    - No degradation of existing water quality is allowed, where it is better than the natural system (antidegradation)
    - Only allows adjustment of the STV
  - Natural Source Exclusion Approach
    - Requires the control of all anthropogenic sources of bacteria
    - Requires the identification and quantification of natural sources of bacteria
    - Exceedance are allowed based on residual exceedances of natural sources
    - Only allows adjustment of the STV

Implementation Provisions – Natural Sources

- Allows the Regional Water Boards to use these approaches without having to adopt them into their individual basin plans
- Allows resources for remediation to be directed toward anthropogenic sources instead of areas with natural sources of bacteria
- Prevents the over-treatment of natural sources of bacteria

Implementation Provisions – High Flow Suspension

- High Flow Suspension of REC-1 Uses
  - When water conditions are considered unsafe for REC-1 uses due to high water flow or velocity
  - A use attainability analysis and U.S. EPA approval is required

Implementation Provisions – Seasonal Suspension

- Seasonal Suspension of REC-1 Uses
  - When water conditions are considered inapplicable or unsafe for the REC-1 beneficial use due to low water flows, low water temperatures, or conditions that freeze waters
  - A use attainability analysis and U.S. EPA approval is required

Water Quality Standards Variance

- Identify the method for using of a water quality standards variance
- “A time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable conditions during the term of the water quality standard variance.”
- Defined in 40 Code of Federal Regulations section 131.14
    - This regulation includes applicability, requirements for submission and how water quality standards variances are implemented with NPDES permits
    - U.S. EPA approval is required.

Schedule

- August 1, 2017 – State Water Board Hearing
  - To hear oral comments
  - No formal action
- August 16, 2017 – Public Comment Deadline
- August – November 2017 – Response to Comments
- December 5, 2017 – State Water consideration

Any Questions?

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