

Celeste Cantu, Executive Director  
State Water Resources Control Board

This is to submit recommendations from the Beach Water Quality Workgroup regarding criteria that should be employed for 303(d) listing marine beach water bodies for pathogens or bacteria. The attached recommendations have been developed by our Monitoring and Reporting Subcommittee and are enthusiastically supported by our workgroup.

The Monitoring and Reporting Subcommittee consists of representatives from the State Water Resources Control Board, Regional Water Quality Control Boards, local environmental health agencies, regulated dischargers and the advocacy group, Heal the Bay. The subcommittee devoted seven meetings to this subject over a period of seven months, and the recommendations reflect a consensus reached by the participants regarding the issues addressed.

The recommendations provide a framework for determining marine beach bacteriological water quality impairments using data generated by regulatory activities conducted by various local agencies. These activities include, but are not limited to, monitoring and regulatory activities conducted by local environmental health agencies, monitoring activities conducted to demonstrate compliance with NPDES permits by wastewater treatment plants and special studies that may be conducted by Regional Water Quality Control Boards and recognized private and public institutions.

Nothing in the recommendations should be construed as limiting the professional and legal judgments that must be exercised by Regional Board staffs in formulating 303(d) lists. Regional Board staffs, and when appropriate, State Board staff should consider all available data and information regarding marine beach water quality in listing water bodies. This is especially true for marine beach water bodies that are not monitored routinely by a public agency.

At this time, the subcommittee has not reached consensus on “delisting” criteria or the use of monitoring data over a longer period than that between listing cycles. The subcommittee plans to continue discussions regarding these issues and will submit its recommendations when these discussions have been completed.

We trust you will find the recommendations appropriate, and that they will provide a basis for establishing consistent and rational approach for the listing process between regional boards.

John Norton, Chief  
Office of Statewide Initiative

# **MONITORING & REPORTING SUBCOMMITTEE BEACH WATER QUALITY WORKGROUP**

## **303(d) LISTING CRITERIA**

**The Monitoring & Reporting Subcommittee recommends the following:**

**Recommendation 1: Listing should be based on the frequency of water quality standards exceedances.**

The frequency of exceedances of water quality objectives established by the State Water Resources Control Board (SWRCB) in the Ocean Plan, and the exceedances of standards established by the Department of Health Services<sup>1</sup> should determine when an ocean water body/beach segment is listed. This represents the most appropriate means of measuring the failure to meet water quality objectives and the loss of a REC-1 designated beneficial use.

The SWRCB<sup>2</sup> and the State Department of Health Services<sup>3</sup>(DHS) and have respectively established water quality objectives and bacterial standards for marine beaches. When these bacterial standards are exceeded the local health officer/environmental health agency having jurisdiction must warn the public that the standards have been exceeded by posting warning signs on the beach where the standard exceedances have occurred. The posting of warning signs on the beach constitutes a failure to meet water quality objectives/standards and the loss of REC-1 beneficial use for that water body.

Routine bacteriological monitoring of ocean water is conducted in accordance with the requirements of AB411<sup>4</sup> by local environmental health agencies and various NPDES permits issued by California Regional Water Quality Control Boards (RWQCB). The latter monitoring is conducted by agencies discharging sewage effluent into the ocean waters. The data collected in these monitoring programs should be used to identify beaches where water quality does not meet state bacteriological standards for marine beaches.

The frequency of “postings” by the local environmental health agency may be used by the RWQCB as the “first screen” to determine if a water body should be listed. When beaches are rarely or never posted and when they are frequently posted, the RWQCB may make the appropriate determination without reviewing the bacteriological data. The number of postings and the total number of days a

---

<sup>1</sup> Title 17, California Code of Regulations

<sup>2</sup> California Water Code.

<sup>3</sup> AB411, Statutes of 1997.

<sup>4</sup> AB411, Statutes of 1997.

beach is posted should not be considered alone since postings may not accurately reflect the frequency that the water body does not meet the health standards or water quality objectives. An analysis of the bacteriological data should be conducted when posting data (reported to the SWRCB by local environmental health agencies) does not provide a clear method for making a listing decision.

A beach should be listed when there is no enforcement action available to address the water quality impairment, and the only means available to address the water quality impairment is a TMDL.

Generally, the number of beach closures should not be considered in the listing criteria since the causes of beach closures can usually be addressed by RWQCB enforcement actions. If site-specific conditions warrant their use, e.g., beach closures caused by high indicator bacterial densities with an unknown source, RWQCB staff may use this data. Other site-specific information should be considered when appropriate. For example, best management practices (BMPs) may have been instituted to address impairment and a TMDL may no longer be required to address the problem.

**Implementation:** RWQCB staff must obtain all relevant data and make a listing determination.

## **Recommendation 2: The threshold frequency for listing should be the number of water quality standard exceedances in an unimpaired watershed.**

Each RWQCB should establish a “reference” beach where possible. The reference beach is one where bacteriological data has been collected from an unimpaired water body, i.e., one that is not impacted by human activity to the greatest extent possible, and the frequency of exceedances at this site becomes the threshold for determining a bacteriological impaired water body. This requires the identification of watersheds within defined regions that have not been environmentally altered by human activity where possible. Bacteriological data should be collected and the number of exceedances of the bacterial standards/objectives should be determined, and the number of exceedances then becomes the threshold in the region for listing<sup>5</sup>.

If data is not available from an unimpaired water body, EPA recommends that the threshold for exceedances should be 10% of the total samples collected. If water quality monitoring at any given site is only conducted during the AB411 period

---

<sup>5</sup> The Wet Weather Bacteria TMDL for Santa Monica Bay Beaches is an example of the reference beach methodology for identifying impaired beaches.

(April 1 thru October 31)<sup>6</sup>, the threshold frequency for exceedances at that site should be set at 4% the total samples.<sup>7</sup>

**Implementation:** RWQCBs shall identify, where possible, an unimpaired water body within that region and collect bacteriological data to determine what is the appropriate threshold to use for the frequency criteria. Lacking data, the RWQCB must select and use the most appropriate threshold frequency. This will generally be either 10% or 4% of the samples as the exceedances threshold.

**Recommendation 3: Listing should be primarily based on the frequency of water quality standards exceeding the threshold number in multiple years.**

The entire bacteriological data set for the time period between listings for any given site should be used to determine impairment and the need to implement a TMDL. Using multiple years of data is more likely to ensure the listing is based on data that is representative of the actual water quality at the beach.

**Implementation:** The entire data set between listing periods should be used to determine if the frequency threshold has been exceeded unless there is a reason to consider the data on a yearly basis. A suitable reason for considering less than the entire data set may be the implementation of a BMP. If only one year in the period exceeds the threshold, professional judgment should be exercised in determining if the water body in question should be listed.

**Recommendation 4: Permanent postings should be counted as exceedances when they are based on site-specific water quality data. “Precautionary” postings should not count as water quality exceedances.**

Local environmental health agencies may “post” beach areas adjacent to storm drain and creek discharges with warning signs permanently. These postings are long term and are based on the experience of the local agency in that they have accumulated sufficient data to show that the ocean water in the area is often impaired when there is a discharge. This type of posting is referred to as a “permanent posting”. There are other instances when warning signs are posted because the local health agency believes that the receiving water will be impaired by the discharge even though there is little or no confirmation monitoring to validate this belief. These are referred to as “precautionary postings”.

As discussed under Recommendation 1, beach listings for impairment due to elevated levels of bacteria should be based on water quality data. Since permanent postings

---

<sup>6</sup> AB411, Statutes of 1997.

<sup>7</sup> SCCWRP, Bight 98 Study.

are typically based on monitoring results, these postings should be counted as exceedances of water quality parameters and used in the listing process.

A permanent posting therefore constitutes water quality impairment and must be listed. Precautionary postings not supported by water quality data should not be considered in the listing process even though both types of postings result in a loss of beneficial use in the area of the posting.

**Implementation:** RWQCB staff must obtain the posting information from each local health jurisdiction. Permanent postings should be available on the SWRCB's web site also.

**Recommendation 5: “Rain Advisories” should be considered in the same manner as precautionary postings.**

“Rain advisories” are issued by local health jurisdictions when rainfall is imminent or after rainfall has begun. These advisories are precautionary in nature and are not based on monitoring data. These advisories are usually issued in lieu of posting the beach during the non-AB 411 periods. During the AB411 period, routine monitoring is required, and if the AB411 standards are exceeded the beach must be posted. Consequently, monitoring data is usable to the degree that it is appropriate during rainfall

AB411 and its regulations<sup>8</sup> do not recognize “rain advisories”. They are an activity that local health jurisdictions generally conducted before the passage of AB411 and the practice has been continued. No protocols have been established for the issuance of these advisories.

Most routine bacteriological monitoring continues as scheduled during wet-weather periods. If an agency suspends monitoring during rainfall or within 72 hours of rainfall, the threshold for listing should be reduced to 4% of the samples collected since bacterial levels usually revert to background 72 hours following rainfall. Thus, this practice results in dry weather monitoring only.

**Implementation:** No implementation issues exist since the recommendation essentially says to ignore these advisories.

---

<sup>8</sup> Title 17, California Code of Regulations

**Recommendation 6: Establish monitoring stations at defined distances from storm drain discharges in order to enhance data consistency.**

Monitoring locations have been established in NPDES permits by RWQCBs and the local health agency establishes monitoring locations for its AB411 regulatory activities. AB411 and its regulations do not prescribe the location of monitoring stations in relation to storm drain discharges. As a result, no consistency exists between the agencies conducting monitoring activities relative to the distances samples are collected from storm drain discharges.

The BWQW has recommended that the distance of a monitoring station from a storm drain discharge be set at 25 yards, but it is unknown how many health agencies or RWQCBs are following this recommendation.

**Implementation:** Neither RWQCBs nor DHS have the authority to establish a consistent location for monitoring stations from storm drain discharges. RWQCBs set the monitoring locations for NPDES compliance but they have no authority over health jurisdictions' monitoring locations. DHS may have the statutory authority to determine monitoring locations, but it did not exercise this authority, if it exists, in the regulations. TMDL compliance monitoring may further complicate any action regarding this recommendation.

**Recommendation 7: Listing should be based on a valid data set.**

RWQCBs should have confidence that the bacteriological data set is adequate for listing purposes. There may be instances where the number of samples collected may be inadequate for determining either the impairment of a water body or in determining that it is unimpaired when doubts exist. Every effort should be made to collect a sufficient amount of data before this determination is made. This may involve special studies or increased monitoring.

**Implementation:** RWQCB staff will have to determine through professional judgment the validity of their data set.

**Recommendation 8: Differences in the results of laboratory analyses utilizing different laboratory methods are insignificant.**

Currently, most health agencies use a defined substrate methodology for the laboratory analyses of their collected samples. Because EPA has not approved this method, dischargers are either using membrane filter or multiple tube

fermentation methodologies for sample analysis. Bight 98<sup>9</sup> studies demonstrated that there was no significant difference in the results each method produced.

**Implementation:** No implementation issues exist.

**Recommendation 9: In the absence of site-specific data, the length of beach to be listed should be 50 yards on each side of the storm drain discharge.**

The Monitoring & Reporting Subcommittee has recommended that monitoring stations be located 25 yards from the source of the impairment, e.g., storm drain discharge. When the bacterial standard(s) are exceeded, signs are routinely posted at 25 yards on each side of the source of the impairment. They can be seen for a distance of approximately 25 yards. Consequently, the loss of beneficial use is approximately 50 yards on each side of the source of impairment.

“Adaptive” sampling may be employed by some monitoring agencies when a monitoring station frequently exceeds bacterial standards in order to assess the area of beach impacted by the storm drain discharge. In these cases, signs are posted at a greater distance from the source discharge point. These distances are reported to SWRCB and are in the database.

In some cases, two monitoring stations may be linked by hydrological conditions. It may also be demonstrated in the future that the amount of flow and its pattern from the discharge point can significantly increase the amount of beach affected by the discharge. In both of these cases the entire area affected should be listed.

**Implementation:** The distance recommended is for guidance purposes only. The establishment of a TMDL, when appropriate, should address the problem regardless of the distance cited in the listing.

---

<sup>9</sup> Noble, Rachel, et al., Southern California Bight 1998 Regional Monitoring Program: I. Summer Shoreline Microbiology, Southern California Coastal Waters Research Project.