

~~Draft~~Proposed Final

Amendment to the Water Quality Control Plan for Ocean Waters of California—Bacteria Provisions and a Water Quality Standards Variance Policy

~~June 30, 2017~~
January 18, 2018

* See Appendix I for definition of terms.

[Revisions, referred to as the “Bacteria Provisions,” to be made to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), are shown in black single strike-through and single underscore font. The revised language would constitute new regulatory language. In addition to the noted revisions, several editorial revisions will be made to the Ocean Plan, including but not limited to appropriate changes to the Title Page, Table of Contents, appendices, page numbers, table and figure numbers, footnote numbers, and headers and footers to reflect the new language. The final locations of tables and figures in relation to the text may also be changed to accommodate the formatting of the Ocean Plan.]

II. WATER QUALITY OBJECTIVES

[Proposed text to be added to and ~~removed~~ from Chapter II.B (Water Quality Objectives—Bacterial Characteristics) of the Ocean Plan.]

B. Bacterial Characteristics

1. Water-Contact Standards

~~Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination.~~ Subsection (a) of this section contains a bacterial water quality objectives adopted by the State Water Board for ocean waters* used for water contact recreation. Subsection (b) describes the bacteriological standardsbeach notification levels adopted by CDPH for ~~coastal~~ waters adjacent to public beaches and public water contact sports areas in ocean waters*.

a. State Water Board Water-Contact StandardsObjectives

- (1) Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Water Board (i.e., waters designated as REC-1), but including all kelp beds*, the following water quality objectives ~~s~~ shall be maintained throughout the water column (see Table 1):

~~30-day Geometric Mean—The following standards are based on the—geometric mean of the five most recent samples from each site:~~

- ~~i. Total coliform density shall not exceed 1,000 per 100 mL;~~
- ~~ii. Fecal coliform density shall not exceed 200 per 100 mL; and~~
- ~~iii. Enterococcus density shall not exceed 35 per 100 mL.~~

~~Single Sample Maximum:~~

- ~~i. Total coliform density shall not exceed 10,000 per 100 mL;~~
- ~~ii. Fecal coliform density shall not exceed 400 per 100 mL;~~
- ~~iii. Enterococcus density shall not exceed 104 per 100 mL; and~~
- ~~iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.~~

A six-week rolling Geometric Mean* (GM) of enterococci not to exceed 30 colony forming units (cfu) per 100 milliliters (cfu/100 mL), calculated weekly, andwith a statistical threshold value* (STV) of 110 cfu/100 mL not to be exceeded more than 10

* See Appendix I for definition of terms.

Reflecting **bold-underline** additions and **~~bold-strikeout~~** deletions to the 06/30/17 draft.

percent of the time, calculated monthly. U.S. EPA recommends using U.S. EPA Method 1600 (U.S. EPA, 2002a) or other equivalent method to measure culturable enterococci.

TABLE 1 REC-1 Water Quality Objectives for Water-Contact in Ocean Waters*

<u>Objective Elements</u>	<u>Estimated Illness Rate (NGI):</u> <u>32 per 1,000 water contact recreators</u>	
	<u>Magnitude</u>	
<u>Indicator</u>	<u>GM* (cfu/100 mL)</u>	<u>STV* (cfu/100 mL)</u>
<u>Enterococci</u>	<u>30</u>	<u>110</u>

The waterbody GM* shall not be greater than the GM* magnitude in any six-week interval, calculated weekly. The STV* shall not be exceeded more than 10 percent of the **samples collected in a single month-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

Water Quality Standards Assessment

When applying the listing factors contained in the Water Quality Control Policy for Developing California’s Clean Water Act Section 303(d) List, the GM* and STV* shall be used as follows, unless a situation-specific weight of the evidence factor is being applied: ~~To determine attainment of the water quality objective, the Only~~ the GM* value shall be applied based on a statistically sufficient number of samples, which is generally not less than five samples equally spaced distributed over a six-week period. ~~However, if~~ a statistically sufficient number of samples is are not available to calculate the GM*, then attainment of the water quality objective shall be determined based **only on the STV*.**

- (2) The “Initial Dilution* Zone” of wastewater outfalls shall be excluded from designation as “kelp beds*” for purposes of bacterial standards, and Regional Water Boards should recommend extension of such exclusion zone where warranted to the State Water Board (for consideration under Chapter III. J.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds* for purposes of bacterial standards.

b. **CDPH Standards Beach Notification Levels**

CDPH has established mMinimum protective bacteriological standards for coastal waters adjacent to public beaches and for public water-contact sports areas in ocean waters***These standards** are **established found** in the California Code of Regulations, title **T**itle **17 (beginning at div. 1, ch. 5, §, section 7958 et seq.)**, and they are identical to the objectives contained in subsection a. above. When a public beach or public water-contact sports area fails to meet these standards, **CDPH-the California Department of Public Health** or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are

* See Appendix I for definition of terms.

met. The **~~CDPH~~** regulations impose more frequent monitoring and more stringent posting and closure requirements on certain high-use public beaches that are located adjacent to a storm drain that flows in the summer. **The Title 17 bacteriological standards are not water quality objectives. The CDPH standards include:**

30-day GM*—Based on the mean of the logarithms of the results of at least five weekly samples during any 30-day sampling period, the density of bacteria in water from any sampling station at a public beach or public water contact sports area, shall not exceed:

- (1) Total coliform density shall not exceed 1,000 per 100 mL;**
- (2) Fecal coliform density shall not exceed 200 per 100 mL; and**
- (3) Enterococcus density shall not exceed 35 per 100 mL.**

Single Sample Maximum:

- (1) Total coliform density shall not exceed 10,000 per 100 mL;**
- (2) Fecal coliform density shall not exceed 400 per 100 mL;**
- (3) Enterococcus density shall not exceed 104 per 100 mL; and**
- (4) Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.**

~~For beaches not covered under Assembly Bill 411 regulations, CDPH imposes the same standards as contained in Title 17 and requires weekly sampling but allows the county health officer more discretion in making posting and closure decisions.~~

2. Shellfish* Harvesting Standards

- a. At all areas where shellfish* may be harvested for human consumption, as determined by the Regional Water Board, the following bacterial objectives shall be maintained throughout the water column:
 - (1) The median total coliform density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100 mL.

III. PROGRAM OF IMPLEMENTATION

[Proposed text to be added to and ~~removed~~ from Chapter III.D (Program of Implementation—Implementation Provisions for Bacterial Characteristics) of the Ocean Plan.]

D. Implementation Provisions for Bacterial Characteristics

1. ~~Water Contact Monitoring~~ Applicability

- a. **The bacteria water quality objective (Chapter II.B.1.a.1) does not supersede any water quality objective for bacteria established by a Regional Water Board for the REC-1 beneficial use after [insert the effective date of the Bacteria Provisions].**
- b. **Total maximum daily loads (TMDLs) established prior to [insert the effective date of the Bacteria Provisions] to implement numeric water quality objectives for bacteria to support REC-1 are in effect for numerous ocean waters*. Such TMDLs remain in**

* See Appendix I for definition of terms.

effect where the bacteria water quality objective (Chapter II.B.1.a.1) supersedes a water quality objective for bacteria for which the TMDL was established. A Regional Water Board may convene a public meeting to evaluate the effectiveness of the TMDL in attaining the bacteria water quality objective (Chapter II.B.1.a.1).

ac. Any of ~~the~~ bacteria water quality objectives (Chapter II.B.1.a.1) shall be implemented, where applicable, through National Pollutant Discharge Elimination System (NPDES) permits issued pursuant to section 402 of the Clean Water Act, water quality certifications issued pursuant to section 401 of the Clean Water Act, waste discharge requirements, and waivers of waste discharge requirements, ~~except to discharges for which load allocations or waste load allocations are assigned by a TMDL established before~~ ~~[insert the effective date of the Bacteria Provisions]~~ Weekly samples shall be collected from each site. The geometric mean shall be calculated using the five most recent sample results.

bd. The GM* and the STV* contained in the applicable bacteria water quality objective (Chapter II.B.1.a.1) shall be strictly applied in all circumstances, including except in the context of a TMDL, established after [insert the effective date of the Bacteria Provisions]. The STV* contained in the applicable bacteria water quality objective shall be strictly applied in all circumstances, except in the context of a TMDL. In the context of a TMDL, Regional Water Boards may implement an alternative the applicable STV* or GM*, or both, by using a reference system*/antidegradation approach or natural sources exclusion approach in accordance with Chapter III.D.2.b. If a single sample exceeds any of the single sample maximum (SSM) standards, repeat sampling at that location shall be conducted to determine the extent and persistence of the exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the SSM standard or until a sanitary survey is conducted to determine the source of the high bacterial densities

- i) Total coliform density will not exceed 10,000 per 100 mL; or
- ii) Fecal coliform density will not exceed 400 per 100 mL; or
- iii) Total coliform density will not exceed 1,000 per 100 mL when the ratio of fecal/total coliform exceeds 0.1;
- iv) enterococcus density will not exceed 104 per 100 mL.

When repeat sampling is required because of an exceedance of any one single sample density, values from all samples collected during that 30-day ~~six-week~~ period will be used to calculate the geometric mean*.

ee. The CDPH-established bacteriological standards beach notification levels (ChapterSection II.B.1.b) for waters adjacent to public beaches and for public water-contact sports areas in ocean waters* will continue to be used for public beach notification programs. It is state policy that the geometric mean bacterial objectives are strongly preferred for use in water body assessment decisions, for example, in developing the Clean Water Act section 303(d) list of impaired waters, because the geometric mean objectives are a more reliable measure of long-term water body conditions. In making assessment decisions on bacterial quality, single sample maximum data must be considered together with any available geometric mean data. The use of only single sample maximum bacterial data is generally inappropriate unless there is a limited data set, the water is subject to short-term spikes in bacterial concentrations, or other circumstances justify the use of only single sample maximum data.

* See Appendix I for definition of terms.

~~d. The Water Contact Objectives (Section II.B.1.a) shall be used in waterbody assessment decisions, for example, in developing the Clean Water Act section 303(d) list of impaired waters. When repeat sampling is required because of an exceedance of any one single sample density, values from all samples collected during that 30-day six-week period will be used to calculate the GM*. For monitoring stations outside of the defined water contact recreation zone (REC-1), samples will be analyzed for total coliform only.~~

2. Natural Sources of Bacteria

a. Applicability

(1) The implementation **provisions** ~~procedures~~ contained in Chapter III.D.2 apply to **municipal storm water discharges regulated pursuant to Clean Water Act section 402(p) and** non-point source discharges except on-site wastewater treatment system discharges. ~~and storm water discharges regulated pursuant to section 402(p) of the Clean Water Act except industrial storm water discharges, and may only be implemented within the context of a TMDL. These implementation provisions do not apply to NPDES discharges other than municipal storm water discharges.~~

b. Reference System*/Antidegradation Approach and Natural Sources Exclusion Approach

(1) TMDLs include waste load allocations for point sources, load allocations for nonpoint sources, and natural background levels to identify and enumerate each individual source.

In the context of a TMDL developed to attain the bacteria water quality objectives (Chapter II.B.1.a.1), a reference system*/antidegradation approach may be utilized to ensure: (1) bacteriological water quality is at least as good as that of an applicable reference system*, and (2) no degradation of existing water quality is allowed when the existing water quality is better than the reference system*. In such circumstances, the TMDL may include a certain frequency of exceedance of the **applicable** bacteria water quality objectives **s STV*** based on the observed exceedance frequency in the applicable reference system* or the targeted waterbody, whichever is less.

In the context of a TMDL developed to attain the bacteria water quality water objectives (Chapter II.B.1.a.1), a natural source exclusion approach may be utilized after all anthropogenic sources of bacteria are identified, quantified, and controlled. In such circumstances, the TMDL may include a certain frequency of exceedance of the **applicable** bacteria water quality objectives **s STV*** based on the observed exceedance frequency of the identified and quantified natural sources of bacteria of the targeted waterbody.

N. Water Quality Standards Variance

Federal regulations establish an explicit regulatory framework for the adoption of a water quality standards variance (WQS Variance*) that states may use to implement adaptive management approaches to improve water quality. (40 C.F.R. § 131.14 (herein referred to as the federal rule.)). **As a result, the Water Board* may adopt a WQS VARIANCE in accordance with the federal rule. The State Water Board and Regional Water Boards are not required to adopt**

* See Appendix I for definition of terms.

specific authorizing provisions into state law before establishing a WQS Variance* consistent with the federal rule.

Under the federal rule, a WQS Variance* may be adopted for one or more NPDES dischargers or for a water body or waterbody segment, but the WQS Variance* only applies to the discharger(s) or the water body or waterbody segment specified in the WQS Variance*.

The federal rule specifies that any WQS Variance* is subject to U.S. EPA review and approval or disapproval. The federal rule also specifies that a WQS Variance* is subject to the public participation requirements at 40 Code of Federal Regulations section 131.20(b), which requires that one or more public hearings be held in accordance with state law and U.S. EPA's public participation regulation (40 C.F.R. part 25).

Where a discharger-specific WQS Variance* is established for a single permit, including an individual permit or a general permit, the federal rule's public participation requirements may be satisfied in accordance with the notice and hearing requirements applicable to adopting an NPDES permit (Wat. Code, § 13378). Because the adoption of such a permit is not the establishment or revision of a rule, the permit action need not be accompanied by a rulemaking action. The applicable hearing requirement for any other WQS VARIANCE would be subject to the hearing requirement and other procedures applicable to revising a water quality control plan.

APPENDIX I DEFINITION OF TERMS

[The Ocean Plan contains Appendix I, which defines numerous terms. Only the definitions below that follow terms in **BOLD DOUBLE UNDERLINE** font are those proposed to be established by the Bacteria Provisions. Reflecting **bold-underline** additions and **~~bold-strikeout~~** deletions to the 06/30/17 draft Bacteria Provisions.]

ACUTE TOXICITY

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

* See Appendix I for definition of terms.

$$TUa = \frac{\log(100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

ALL FORMS OF MARINE LIFE includes all life stages of all marine species.

AREA PRODUCTION FOREGONE (APF), also known as habitat production foregone, is an estimate of the area that is required to produce (replace) the same amount of larvae or propagules* that are removed via entrainment at a desalination facilities* intakes. APF is calculated by multiplying the proportional mortality* by the source ~~water body~~waterbody,* which are both determined using an empirical transport model.*

AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) are those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that maintenance of natural water quality is assured. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.* ASBS are also referred to as State Water Quality Protection Areas* – Areas of Special Biological Significance (SWQPA-ASBS).

BASIN PLAN is a water quality control plan that consists of a designation or establishment for the waters within a specified area of all of the following: (1) Beneficial uses to be protected, (2) Water quality objectives, (3) A program of implementation needed for achieving water quality objectives.

BRINE is the byproduct of desalinated* water having a salinity* concentration greater than a desalination facility's* intake source water.

BRINE MIXING ZONE is the area where salinity* may exceed 2.0 parts per thousand above natural background salinity,* or the concentration of salinity* approved as part of an alternative receiving water limitation. The standard brine mixing zone shall not exceed 100 meters (328 feet) laterally from the points of discharge and throughout the water column. An alternative brine mixing zone, if approved as described in chapter III.M.3.d, shall not exceed 200 meters (656 feet) laterally from the points of discharge and throughout the water column. The brine mixing zone is an allocated impact zone where there may be toxic effects on marine life due to elevated salinity.

CHLORDANE shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

CHRONIC TOXICITY: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

* See Appendix I for definition of terms.

The NOEL is expressed as the maximum percent effluent or receiving water* that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Appendix III, Table III-1.

DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

DEGRADE: Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant* differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

DESALINATION FACILITY is an industrial facility that processes water to remove salts and other components from the source water to produce water that is less saline than the source water.

DICHLOROBENZENES shall mean the sum of 1,2- and 1,3-dichlorobenzene.

DOWNSTREAM OCEAN WATERS shall mean waters downstream with respect to ocean currents.

DREDGED MATERIAL: Any material* excavated or dredged from the navigable waters of the United States, including material* otherwise referred to as "spoil".

EELGRASS BEDS are aggregations of the aquatic plant species of the genus *Zostera*.

EMPIRICAL TRANSPORT MODEL (ETM) is a methodology for determining the spatial area known as the source ~~water body~~waterbody* that contains the source water population, which are the organisms that are at risk of entrainment as determined by factors that may include but are not limited to biological, hydrodynamic, and oceanographic data. ETM can also be used to estimate proportional mortality,* P_m.

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

ENDOSULFAN shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams that serve as mixing zones for fresh and ocean* waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant* mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

ETM/APF APPROACH or ANALYSIS. For guidance on how to perform an ETM/APF analysis please see Appendix E of the Staff Report for Amendment to the Water Quality Control Plan For Ocean Waters

* See Appendix I for definition of terms.

of California Addressing Desalination Facility Intakes, Brine Discharges, And The Incorporation Of Other Non-substantive Changes.

FEASIBLE for the purposes of chapter III.M, shall mean capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

FLOW AUGMENTATION is a type of in-plant dilution and occurs when a desalination facility* withdraws additional source water for the specific purpose of diluting brine* prior to discharge.

FULL CAPTURE SYSTEM is a treatment control*, or series of treatment controls*, including but not limited to, a multi-benefit project* or a low-impact development control* that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain.

[Rational equation is used to compute the peak flow rate: $Q = C \cdot I \cdot A$, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map specific to each region, and A = subdrainage area (acres).]

Prior to installation, full capture systems* must be certified by the Executive Director, or designee, of the State Water Board. Uncertified full capture systems* will not satisfy the requirements of these Trash Provisions*. To request certification, a permittee shall submit a certification request letter that includes all relevant supporting documentation to the State Water Board's Executive Director. The Executive Director, or designee, shall issue a written determination approving or denying the certification of the proposed full capture system* or conditions of approval, including a schedule to review and reconsider the certification. Full capture systems* certified by the Los Angeles Regional Water Board prior to the effective date of these Trash Provisions* and full capture systems* listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014) will satisfy the requirements of these Trash Provisions*, unless the Executive Director, or designee, of the State Water Board determines otherwise.

FULL CAPTURE SYSTEM EQUIVALENCY is the Trash* load that would be reduced if full capture systems* were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land (priority land uses*, significant trash generating areas*, facilities or sites regulated by NPDES permits for discharges of storm water* associated with industrial activity, or specific land uses or areas that generate substantial amounts of Trash*, as applicable). The full capture system equivalency* is a Trash* load reduction target that the permittee quantifies by using an approach, and technically acceptable and defensible assumptions and methods for applying the approach, subject to the approval of permitting authority*. Examples of such approaches include, but are not limited to, the following:

- (1) Trash Capture Rate Approach. Directly measure or otherwise determine the amount of Trash* captured by full capture systems* for representative samples of all similar types of land uses, facilities, or areas within the relevant areas of land over time to identify specific trash capture rates. Apply each specific Trash* capture rate across all similar types of land uses, facilities, or areas to determine full capture system equivalency*. Trash* capture rates may be determined either through a pilot study or literature review. Full capture systems* selected to evaluate Trash* capture rates may cover entire types of land uses, facilities, or areas, or a representative subset of types of land uses, facilities, or areas. With this approach, full capture system equivalency* is the sum of the products of each type of land

* See Appendix I for definition of terms.

use, facility, or area multiplied by Trash* capture rates for that type of land use, facility, or area.

- (2) Reference Approach. Determine the amount of Trash* in a reference receiving water in a reference watershed where full capture systems* have been installed for all storm drains that capture runoff from all relevant areas of land. The reference watershed must be comprised of similar types and extent of sources of trash* and land uses (including priority land uses* and all other land uses), facilities, or areas as the permittee's watershed. With this approach, full capture system equivalency* would be demonstrated when the amount of Trash* in the receiving water is equivalent to the amount of Trash* in the reference receiving water.

GEOMETRIC MEAN (GM) is a type of mean or average **that, which** indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum). The geometric mean is defined as the nth root of the product of n numbers. **The formula is expressed as: $GM = \sqrt[n]{(x_1)(x_2)(x_3) \dots (x_n)}$, where x is the sample value and n is the number of samples taken.**

GRAYWATER is drainage from galley, dishwasher, shower, laundry, bath, and lavatory wash basin sinks, and water fountains, but does not include drainage from toilets, urinals, hospitals, or cargo spaces.

HALOMETHANES shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

INDICATOR BACTERIA includes total coliform bacteria, fecal coliform bacteria (or *E. coli*), and/or Enterococcus bacteria.

IN-KIND MITIGATION is when the habitat or species lost is the same as what is replaced through mitigation.

INSTITUTIONAL CONTROLS are non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk Trash* bins, collection of the Trash*, anti-litter educational and outreach programs, producer take-back for packaging, and ordinances.

INITIAL DILUTION is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant* mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

* See Appendix I for definition of terms.

KELP BEDS, are aggregations of marine algae of the order Laminariales, including species in the genera *Macrocystis*, *Nereocystis*, and *Pelagophycus*. Kelp beds include the total foliage canopy throughout the water column.

LARGE PASSENGER VESSELS are vessels of 300 gross registered tons or greater engaged in carrying passengers for hire. The following vessels are not large passenger vessels:

- (1) Vessels without berths or overnight accommodations for passengers;
- (2) Noncommercial vessels, warships, vessels operated by nonprofit entities as determined by the Internal Revenue Service, and vessels operated by the state, the United States, or a foreign government;
- (3) Oceangoing vessels,* as defined below (e.g. those used to transport cargo).

LOW-IMPACT DEVELOPMENT CONTROLS are treatment controls* that employ natural and constructed features that reduce the rate of storm water* runoff, filter out pollutants, facilitate storm water* storage onsite, infiltrate storm water* into the ground to replenish groundwater supplies, or improve the quality of receiving groundwater and surface water. (See Water Code § 10564.).

LOEC is the lowest observed effect concentration or the lowest concentration of effluent that causes observable adverse effects in exposed test organisms.

MARICULTURE is the culture of algae, plants, and animals in marine waters independent of any pollution source.

MARINE MANAGED AREAS are named, discrete geographic marine or estuarine areas along the California coast designated by law or administrative action, and intended to protect, conserve, or otherwise manage a variety of resources and their uses. According to the California Public Resources Code (§§ 36600 et seq.) there are six classifications of marine managed areas, including State Marine Reserves, State Marine Parks and State Marine Conservation Areas, State Marine Cultural Preservation Areas, State Marine Recreational Management Areas, and State Water Quality Protection Areas.*

MARKET SQUID NURSURIES are comprised of numerous egg capsules, each containing approximately 200 developing embryos, attached in clusters or mops to sandy substrate with moderate water flow. Market squid (*Doryteuthis opalescens*) nurseries occur at a wide range of depths; however, mop densities are greatest in shallow, nearshore waters between ten and 100 meters (328 feet) deep.

MATERIAL: (a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of this Ocean Plan relating to waste disposal, dredging and the disposal of dredged material* and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.* For the purposes of chapter III.M.2.d, materials relates to the common usage in (a).

METHOD DETECTION LIMIT (MDL) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. PART 136 Appendix B.

MINIMUM LEVEL (ML) is the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes and processing steps have been followed.

* See Appendix I for definition of terms.

MULTI-BENEFIT PROJECT is a treatment control* project designed to achieve any of the benefits set forth in section 10562, subdivision (d) of the Water Code. Examples include projects designed to: infiltrate, recharge or store storm water* for beneficial reuse; develop or enhance habitat and open space through storm water* and non-storm water management; and/or reduce storm water* and non-storm water runoff volume.

MULTIPOINT DIFFUSERS are linear structures consisting of spaced ports or nozzles that are installed on submerged marine outfalls. For the purposes of chapter III.M, multipoint diffusers discharge brine* waste into an ambient receiving ~~water body~~waterbody and enable rapid mixing, dispersal, and dilution of brine* within a relatively small area.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) has the same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(8).

NATURAL BACKGROUND SALINITY is the salinity* at a location that results from naturally occurring processes and is without apparent human influence. For purposes of determining natural background salinity, the regional water board may approve the use of:

- (1) the mean monthly natural background salinity. Mean monthly natural background salinity shall be determined by averaging 20 years of historical salinity* data in the proximity of the proposed discharge location and at the depth of the proposed discharge, when feasible.* For historical data not recorded in parts per thousand, the regional water boards may accept converted data at their discretion. When historical data are not available, natural background salinity shall be determined by measuring salinity* at depth of proposed discharge for three years, on a weekly basis prior to a desalination facility* discharging brine,* and the mean monthly natural salinity* shall be used to determine natural background salinity; or
- (2) the actual salinity at a reference location, or reference locations, that is representative of natural background salinity at the discharge location. The reference locations shall be without apparent human influence, including wastewater outfalls and brine discharges.

Either method to establish natural background salinity may be used for the purpose of determining compliance with the receiving water limitation or an effluent limitation for salinity. If a reference location(s) is used for compliance monitoring, the permit should specify that historical data shall be used if reference location data becomes unavailable. An owner or operator shall submit to the regional water board all necessary information to establish natural background salinity.

NATURAL LIGHT: Reduction of natural light may be determined by the Regional Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Board.

NO DISCHARGE ZONE (NDZ) is an area in which both treated and untreated sewage discharges from vessels are prohibited. Within NDZ boundaries, vessel operators are required to retain their sewage discharges onboard for disposal at sea (beyond three miles from shore) or onshore at a pump-out facility.

NON-STORM WATER DISCHARGE is any runoff that is not the result of a precipitation event. This is often referred to as "dry weather flow."

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays,* estuaries, and coastal lagoons.* If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

* See Appendix I for definition of terms.

OCEANGOING VESSELS (i.e., oceangoing ships) means commercial vessels of 300 gross registered tons or more calling on California ports or places, excluding active military vessels.

OILY BILGE WATER includes bilge water that contains used lubrication oils, oil sludge and slops, fuel and oil sludge, used oil, used fuel and fuel filters, and oily waste.

OUT-OF-KIND MITIGATION is when the habitat or species lost is different than what is replaced through mitigation.

PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

PERMITTING AUTHORITY means the State Water Board or Regional Water Board, whichever issues the permit.

PREPRODUCTION PLASTIC has the same meaning set forth in section 13367(a) of the Water Code.

PRIORITY LAND USES are those developed sites, facilities, or land uses (i.e., not simply zoned land uses) within the MS4* permittee's jurisdiction from which discharges of Trash* are regulated by this Ocean Plan as follows:

- (1) **High-density residential:** all land uses with at least ten (10) developed dwelling units/acre.
- (2) **Industrial:** land uses where the primary activities on the developed parcels involve product manufacture, storage, or distribution (e.g., manufacturing businesses, warehouses, equipment storage lots, junkyards, wholesale businesses, distribution centers, or building material sales yards).
- (3) **Commercial:** land uses where the primary activities on the developed parcels involve the sale or transfer of goods or services to consumers (e.g., business or professional buildings, shops, restaurants, theaters, vehicle repair shops, etc.)
- (4) **Mixed urban:** land uses where high-density residential, industrial, and/or commercial land uses predominate collectively (i.e., are intermixed).
- (5) **Public transportation stations:** facilities or sites where public transit agencies' vehicles load or unload passengers or goods (e.g., bus stations and stops).

Equivalent alternate land uses: An MS4* permittee with regulatory authority over priority land uses* may issue a request to the applicable permitting authority* that the MS4* permittee be allowed to substitute one or more land uses identified above with alternates land use within the MS4* permittee's jurisdiction that generates rates of Trash* that are equivalent to or greater than the priority land use(s)* being substituted. The land use area requested to substitute for a priority land use* need not be an acre-for-acre substitution but may involve one or more priority land uses*, or a fraction of a priority land use*, or both, provided the total trash* generated in the equivalent alternative land use is equivalent to or greater than the total Trash* generated from the priority land use(s)* for which substitution is requested. Comparative Trash* generation rates shall be established through the reporting of quantification measures such as street sweeping and catch basin cleanup records; mapping; visual trash presence surveys, such as the "Keep America Beautiful Visible Litter Survey"; or other information as required by the permitting authority*.

* See Appendix I for definition of terms.

PROPAGULES are structures that are capable of propagating an organism to the next stage in its life cycle via dispersal. Dispersal is the movement of individuals from their birth site to their reproductive grounds.

PROPORTIONAL MORTALITY, P_m , is percentage of larval organisms or propagules* in the source ~~water body~~waterbody* that is expected to be entrained at a desalination facility's* intake. It is assumed that all entrained larvae or propagules* die as a result of entrainment.

RECEIVING WATER, for permitted storm water discharges and nonpoint sources, should be measured at the point of discharge(s), in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero).

REFERENCE SYSTEM is **san area and associated monitoring point that is not impacted by human activities that potentially affect bacteria densities in the receiving waterbody, a watershed or water body segment determined by the Water Board to be minimally disturbed by anthropogenic stresses but otherwise is representative of conditions of the assessed site, watershed, or water body segment.**

SALINITY is a measure of the dissolved salts in a volume of water. For the purposes of this Plan, salinity shall be measured using a standard method approved by the regional water board (e.g. Standard Method 2520 B, EPA Method 120.1, EPA Method 160.1) and reported in parts per thousand (ppt). For historical salinity data not recorded in parts per thousand, the regional water boards may accept converted data at their discretion.

SEAWATER is salt water that is in or from the ocean. For the purposes chapter III.M, seawater includes tidally influenced waters in coastal estuaries and coastal lagoons* and underground salt water beneath the seafloor, beach, or other contiguous land with hydrologic connectivity to the ocean.

SENSITIVE HABITATS, for the purposes of this Plan, are kelp beds,* rocky substrate, surfgrass beds,* eelgrass beds,* oyster beds, spawning grounds for state or federally managed species, market squid nurseries,* or other habitats in need of special protection as determined by the Water Boards.

SHELLFISH are organisms identified by the California Department of Public Health as shellfish for public health purposes (i.e., mussels, clams and oysters).

SIGNIFICANT difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

SIGNIFICANT TRASH GENERATING AREAS means all locations or facilities within the Department's jurisdiction where Trash* accumulates in substantial amounts, such as:

- (1) Highway on- and off-ramps in high density residential, commercial, and industrial land uses (as such land uses are defined under priority land uses* herein).
- (2) Rest areas and park-and-rides.
- (3) State highways in commercial and industrial land uses (as such land uses are defined under priority land uses* herein).
- (4) Mainline highway segments to be identified by the Department through pilot studies and/or surveys.

SOURCE WATER BODY~~WATERBODY~~ is the spatial area that contains the organisms that are at risk of entrainment at a desalination facility* as determined by factors that may include, but are not limited to, biological, hydrodynamic, and oceanographic data.

* See Appendix I for definition of terms.

STATE WATER QUALITY PROTECTION AREAS (SWQPAs) are nonterrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All Areas of Special Biological Significance (ASBS)* that were previously designated by the State Water Board in Resolutions 74-28, 7432, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by this Plan.

STATE WATER QUALITY PROTECTION AREAS – GENERAL PROTECTION (SWQPA-GP) designated by the State Water Board to protect marine species and biological communities from an undesirable alteration in natural water quality within State Marine Parks and State Marine Conservation Areas.

STATISTICAL THRESHOLD VALUE (STV) for the bacteria water quality objective (Chapter II.B.1.a.1) is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population ~~that should not be exceeded by more than 10 percent of the samples taken.~~ The STV* for the bacteria water quality objective (Chapter II.B.1.a.1) is 110 cfu/100mL.

STORM WATER has the same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(13) (Nov. 16, 1990).

SUBSURFACE INTAKE, for the purposes of chapter III.M, is an intake withdrawing seawater* from the area beneath the ocean floor or beneath the surface of the earth inland from the ocean.

SURFGRASS BEDS are aggregations of marine flowering plants of the genus *Phyllospadix*.

TCDD EQUIVALENTS shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

<u>Isomer Group</u>	<u>Toxicity Equivalence Factor</u>
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

TRASH means all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.

TRASH PROVISIONS are the water quality objective for Trash*, as well as the prohibition of discharge set forth in Chapter III.I and implementation requirements set forth in Chapter III.L herein.

* See Appendix I for definition of terms.

TREATMENT CONTROLS are structural best management practices to either (a) remove pollutants and/or solids from storm water* runoff, wastewater, or effluent, or (b) capture, infiltrate or reuse storm water* runoff, wastewater, or effluent. Treatment controls include full capture systems* and low-impact development controls*.

WASTE: As used in this Plan, waste includes a discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

WATER RECLAMATION: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

WQS VARIANCE: A water quality standards variance, as defined by 40 Code of Federal Regulations section 131.3(o), is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the **WQS-water quality standards variance**.

* See Appendix I for definition of terms.