RETURN TO SER AR INDEX

314 CMR 4.00: MASSACHUSETTS SURFACE WATER QUALITY STANDARDS

Section

4.01: General Provisions
4.02: Definitions
4.03: Application of Standards
4.04: Antidegradation Provisions
4.05: Classes and Criteria
4.06: Basin Classification and Maps

4.01: General Provisions

(1) Title. 314 CMR 4.00 shall be known as the "Massachusetts Surface Water Quality Standards".

(2) Organization of the Standards. 314 CMR 4.00 is comprised of six sections, General Provisions (314 CMR 4.01) Definitions (314 CMR 4.02), Application of Standards (314 CMR 4.03), Antidegradation Provisions (314 CMR 4.04), Classes and Criteria (314 CMR 4.05), and Basin Classification and Maps (314 CMR 4.06).

(3) Authority. The Massachusetts Surface Water Quality Standards are adopted by the Department pursuant to the provisions of M.G.L. c. 21, § 27.

(4) Purpose. M.G.L. c. 21, §§ 26 through 53 charges the Department with the duty and responsibility to protect the public health and enhance the quality and value of the water resources of the Commonwealth. It directs the Department to take all action necessary or appropriate to secure to the Commonwealth the benefits of the Clean Water Act, 33 U.S.C. §1251 *et seq*. The objective of 33 U.S.C. §1251 *et seq*. is the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. To achieve the foregoing requirements the Department has adopted the Massachusetts Surface Water Quality Standards which designate the most sensitive uses for which the various waters of the Commonwealth shall be enhanced, maintained and protected; which prescribe the minimum water quality criteria required to sustain the designated uses; and which contain regulations necessary to achieve the designated uses and maintain existing water quality including, where appropriate, the prohibition of discharges.

(5) Severability. If any provision of 314 CMR 4.00 is held invalid, the remainder of 314 CMR 4.00 shall not be affected.

4.02: Definitions

Aquatic Life. A native, naturally diverse, community of aquatic flora and fauna including, but not limited to, wildlife and threatened and endangered species.

Authorization. An approval granted pursuant to 314 CMR 4.04(5) for a discharge to High Quality Waters, Outstanding Resource Waters or Special Resource Waters.

Background Conditions. That water quality which exists or would exist in the absence of pollutants requiring permits and other controllable cultural factors that are subject to regulation under M.G.L. c. 21, §§ 26 through 53.

Best Available Treatment Technology. The technology based standard of the Clean Water Act defined as Best Available Technology Economically Achievable (BAT) for privately owned treatment works. BAT effluent limitation guidelines reflect the best performance technologies for a particular pollutant or group of pollutants, or for a category or class of point sources, that are economically achievable.

SDMS DocID 517931

4.02: continued

Best Management Practices or BMPs. Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the Commonwealth. BMPs include treatment requirements, operating procedures, structures, devices, and/or practices to control plant site runoff, spillage, or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment. The method used by the Department to develop technology based Surface Water Discharge Permit Conditions on a case by case basis using all reasonably available and relevant data.

Biological Integrity. The capability of supporting and maintaining a balanced, integrated, adaptive community of organisms having species composition, diversity, and functional organization comparable to that of the natural habitat of the region.

Coastal and Marine Waters. The Atlantic Ocean and all contiguous saline bays, inlets and harbors within the jurisdiction of the Commonwealth including areas where fresh and salt waters mix and tidal effects are evident or any partially enclosed coastal body of water where the tide meets the current of a stream or river.

Cold Water Fishery. Waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed 68°F (20°C) and, when other ecological factors are favorable (such as habitat), are capable of supporting a year-round population of cold water stenothermal aquatic life such as trout (*salmonidae*).

Combined Sewer Overflow or CSO. Any intermittent overflow, bypass or other discharge from a municipal combined sewer system which results from a wet weather flow in excess of the dry weather carrying capacity of the system.

Criteria. Elements of state water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a use.

Cultural Eutrophication. The human induced increase in nutrients resulting in acceleration of primary productivity, which causes nuisance conditions, such as algal blooms or dense and extensive macrophyte growth, in a waterbody.

Designated Use. Those uses specified in 314 CMR 4.05 and 314 CMR 4.06 for each water Class whether or not they are being attained.

Discharge of Pollutants. Any addition of any pollutant or combination of pollutants to the waters of the Commonwealth from any source.

EPA. The United States Environmental Protection Agency.

Epilimnion. The upper circulating layer of a stratified lake or pond.

Existing Use. Those designated uses and any other uses that do not impair the designated uses that are actually attained in a waterbody on or after November 28, 1975; except that in no case shall assimilation or transport of pollutants be considered an existing use.

Federal Act. The Federal Water Pollution Control Act (FWPCA), currently known as the Clean Water Act, 33 U.S.C. §1251, *et seq.*

Harmonic Mean Flow. A longterm flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows.

Highest and Best Practical Treatment (HBPT). The best practicable waste treatment technology for publicly owned treatment works that is the most appropriate means available on a regional basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. HBPT effluent limitation guidelines reflect the best performance technologies for a particular pollutant or group of pollutants that are economically achievable.

4.02: continued

Inland Waters or Fresh Waters. Any surface water not subject to tidal action or not subject to the mixing of fresh and ocean waters.

Lakes and Ponds. Waterbodies having open water, situated in a topographical depression, generally with a maximum depth of greater than two meters. Lakes and ponds do not include constructed stormwater retention basins, constructed impervious basins or impervious impoundments, permitted wastewater lagoons, constructed farm ponds into which and from which no stream or river flows, and generally do not include dammed river or stream impoundments. The Department may determine, on a case by case basis, that a shallower waterbody or a dammed river or stream impoundment is a lake or pond based on aquatic and other resources or uses to be protected.

Massachusetts Act. The Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53.

National Goal Uses. Propagation of fish, shellfish other aquatic life and wildlife and recreation in and on the water in accordance with 33 U.S.C. § 1251 *et seq*.

New or Increased Discharge. Any discharge which commences after the date 314 CMR 4.00 initially became effective; any discharge requiring a permit which is unpermitted and commenced prior to the date 314 CMR 4.00 became effective; and any increase in discharges except for an increase in conformance with a currently valid permit.

Nonpoint Source. Any source of pollutant discharge that is not a point source.

Point Source. Any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

Pollutant. Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter in whatever form, and whether originating at a point or nonpoint source, that is or may be discharged, drained or otherwise introduced into any sewage system, treatment works or waters of the Commonwealth.

Primary Contact Recreation. Any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing and water skiing.

Rivers and Streams. Waterbodies contained within a channel (naturally or artificially created) which periodically or continuously contains flowing water or forms a connecting link between two bodies of standing water.

Secondary Contact Recreation. Any recreation or other water use in which contact with the water is either incidental or accidental. These include but are not limited to fishing, including human consumption of fish, boating and limited contact incident to shoreline activities. Where designated, secondary contact recreation also includes shellfishing, including human consumption of shellfish.

Segment. A finite portion of a waterbody established by the Department for the purpose of classification.

Source Reduction. In-plant changes in production processes or raw materials that reduce, avoid or eliminate the use of pollutants, including but not limited to toxic or hazardous substances, or generation of pollution by-product per unit of product, so as to reduce risks overall to the environment. Also compliance with M.G.L. c. 21I, the Toxics Use Reduction Act, to the extent required by such law.

4.02: continued

Surface Waters. All waters other than groundwaters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and vernal pools.

Total Maximum Daily Load (TMDL). The sum of a receiving water's individual waste load allocations and load allocations and natural background, which, together with a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality, represents the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards in all seasons.

Toxic Pollutants. Any pollutant or combination of pollutants, including disease causing agents, that are capable of producing an adverse effect in an organism or its offspring including food chain effects, according to information available to the Department. The effect may be the result of direct or indirect exposure and may injure structure, function or cause death to the organism. These pollutants include, but are not limited to, those identified in 314 CMR 3.17. (Massachusetts Surface Water Discharge Permit Program, Toxic Pollutants).

Use Attainability Analysis (UAA) . A structured scientific assessment of the factors affecting the attainment of a use, which may include physical, chemical, biological, and economic factors as described in 40 CFR 131.10(g).

Variance. A temporary modification of the surface water quality standards issued pursuant to 314 CMR 4.03(4).

Vernal Pool. A waterbody that has been certified by the Massachusetts Division of Fisheries and Wildlife as a vernal pool. Vernal pools are confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations.

Warm Water Fishery. Waters in which the maximum mean monthly temperature generally exceeds 68° F (20° C) during the summer months and are not capable of sustaining a year-round population of cold water stenothermal aquatic life.

Waters of the Commonwealth. All waters within the jurisdiction of the Commonwealth, including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters, groundwaters, and vernal pools.

4.03: Application of Standards

(1) (a) Establishment of Effluent Limitations. The Department will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. The level of treatment for an individual discharger will be established by the discharge permit in accordance with 314 CMR 3.00 (Massachusetts Surface Water Discharge Permit Program). In establishing water quality based effluent limitations the Department shall take into consideration natural background conditions and existing discharges. Discharges shall be limited or prohibited to protect existing uses and not interfere with the attainment of designated uses in downstream and adjacent segments. The Department will provide a reasonable margin of safety to account for any lack of knowledge concerning the relationship between the pollutants being discharged and their impact on water quality. Where the Department has not established water quality based effluent limitations in a permit and a violation of water quality standards attributable to a discharge occurs, the Department may modify, suspend or revoke the permit, in whole or in part, for cause in accordance with 314 CMR 3.00.

4.03: continued

(b) Compliance Schedules. A permit may, when appropriate, specify a schedule leading to compliance with the Massachusetts and Federal Clean Water Acts and regulations. The purpose of a schedule of compliance generally is to afford a permittee adequate time to comply with one or more permit requirements or limitations that are based on new, newly interpreted or revised water quality standards that became effective after both issuance of the initial permit for a discharge and July 1, 1977. The Department may include a schedule of compliance in a permit at the time of permit reissuance or modification where the permittee either cannot comply with such permit requirements or limitations, or there is insufficient information available to determine whether the permittee can comply with such permit requirements or limitations. A schedule of compliance shall require compliance at the earliest practicable time, as determined by the Department. A schedule of compliance shall include dates for specified tasks or activities leading to compliance and may include interim effluent limitations, as the Department deems appropriate.

(c) TMDLs. The Department may develop and enforce compliance with TMDLs and TMDL implementation plans for waters or segments impaired by a pollutant or pollutants.

(2) Mixing Zones. In applying 314 CMR 4.00 the Department may recognize a limited area or volume of a waterbody as a mixing zone for the initial dilution of a discharge. Waters within a mixing zone may fail to meet specific water quality criteria provided the following conditions are met:

(a) Mixing zones shall be limited to an area or volume as small as feasible. There shall be no lethality to organisms passing through the mixing zone as determined by the Department. The location, design and operation of the discharge shall minimize impacts on aquatic life and other existing and designated uses within and beyond the mixing zone.

(b) Mixing zones shall not interfere with the migration or free movement of fish or other aquatic life. There shall be safe and adequate passage for swimming and drifting organisms with no deleterious effects on their populations.

(c) Mixing zones shall not create nuisance conditions, accumulate pollutants in sediments or biota in toxic amounts or otherwise interfere with the existing or designated uses of surface waters.

(3) Hydrologic Conditions. The Department will determine the most severe hydrologic condition at which water quality criteria must be applied. The Department may further stipulate the magnitude, duration and frequency of allowable excursions from the magnitude component of criteria and may determine that criteria should be applied at flows lower than those specified in order to prevent adverse impacts of discharges on existing and designated uses.

(a) For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated using methods approved by the Department.

(b) In waters where flows are regulated by dams or similar structures, the lowest flow condition at which aquatic life criteria must be applied is the flow equaled or exceeded 99% of the time on a yearly basis, or another equivalent flow agreed upon by the Department and the federal, state or private entity controlling the flow. The minimum flow established in such an agreement will become the critical low flow for those waters covered by the agreement. When the Department issues a 401 Water Quality Certification of an activity subject to licensing by the Federal Energy Regulatory Commission, flows shall be maintained or restored to protect existing and designated uses.

(c) In coastal and marine waters and for lakes and ponds, the Department will establish extreme hydrologic conditions at which aquatic life criteria must be applied on a case-by-case basis. In all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses.

(d) For rivers and streams and waters whose flows are regulated by dams or similar structures, human health based criteria may be applied at the harmonic mean flow. For coastal and marine waters and lakes and ponds, human health based criteria may be applied at conditions the Department determines will result in protection at least equivalent to that provided for rivers and streams.

4.03: continued

(4) National Goal Uses, Partial Uses, and Variances. The Department may remove a national goal use that is not an existing use, designate a segment as partial use, or grant a variance to authorize a discharge, provided the applicant demonstrates that:

(a) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(b) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or

(c) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place, or

(d) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(e) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(f) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact, this demonstration may include documentation of median household income or other economic measures adjusted to reflect the cost of living or other circumstances particular to the affected area.

Prior to removal of a use or the designation of a partial use, the Department shall provide public notice and the opportunity for a public hearing in accordance with M.G.L. c. 30A and the applicant shall submit to the Department the information necessary for completion of a Use Attainability Analysis. The Department may grant a variance for a specified period of time for a particular discharger and for specific pollutants so that it can be determined through a Use Attainability Analysis whether uses can be attained. A variance applicant shall submit to the Department a detailed assessment of the types of information that will be needed for completion of the Use Attainability Analysis. A variance may be granted only for the pollutants causing noncompliance with criteria and all other provisions of 314 CMR 4.00 apply for the term of the variance. Prior to granting a variance, the Department will provide or require public notice and provide an opportunity for a public hearing in accordance with 314 CMR 2.00. An applicant granted a variance shall submit to the Department information necessary for completion of a Use Attainability Analysis in accordance with the provisions of the variance and the permit.

(5) Natural Background Conditions. Excursions from criteria due to solely natural conditions shall not be interpreted as violations of standards and shall not affect the water use classifications adopted by the Department.

(6) Procedures for Sampling and Analyses. All procedures used for the purpose of collecting, preserving and analyzing samples in connection with 314 CMR 4.00 shall be approved by the Department. Approved procedures include the following and the Department may approve others as it deems appropriate:

(a) the latest edition of *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, *et al*.;

(b) the latest edition of National Handbook of Recommended Methods for Water Resources Investigations prepared cooperatively by agencies of the United States Government;

(c) the latest edition of Techniques of Water Resources Investigations of the United States Geological Survey;

(d) Non-potable Fresh Water Methods U.S. EPA. 40 CFR Part 136. April 4th, 1995. Vol. 60, No. 64, Pages 17160-17169, as may be revised;

(e) Parsons, T.R., Maita, Y., and Lalli, C.M., *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press, New York, 1984; and

(f) *Methods for the Determination of Chemical Substances in Marine and Estuarine Environmental Matrices* - 2nd Edition. EPA/600/R-97/072. Office of Research and Development, U.S. EPA, Washington, D.C. 1997, as may be revised.

4.04: Antidegradation Provisions

(1) Protection of Existing Uses. In all cases existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) Protection of High Quality Waters. High Quality waters are waters whose quality exceeds minimum levels necessary to support the national goal uses, low flow waters, and other waters whose character cannot be adequately described or protected by traditional criteria. These waters shall be protected and maintained for their existing level of quality unless limited degradation by a new or increased discharge is authorized by the Department pursuant to 314 CMR 4.04(5). Limited degradation also may be allowed by the Department where it determines that a new or increased discharge is insignificant because it does not have the potential to impair any existing or designated water use and does not have the potential to cause any significant lowering of water quality.

(3) Protection of Outstanding Resource Waters. Certain waters are designated for protection under this provision in 314 CMR 4.06. These waters include Class A Public Water Supplies (314 CMR 4.06(1)(d)1.) and their tributaries, certain wetlands as specified in 314 CMR 4.06(2) and other waters as determined by the Department based on their outstanding socio-economic, recreational, ecological and/or aesthetic values. The quality of these waters shall be protected and maintained.

(a) Any person having an existing discharge to these waters shall cease said discharge and connect to a Publicly Owned Treatment Works (POTW) unless it is shown by said person that such a connection is not reasonably available or feasible. Existing discharges not connected to a POTW shall be provided with the highest and best practical method of waste treatment determined by the Department as necessary to protect and maintain the outstanding resource water.

(b) A new or increased discharge to an Outstanding Resource Water is prohibited unless:

1. the discharge is determined by the Department to be for the express purpose and intent of maintaining or enhancing the resource for its designated use and an authorization is granted as provided in 314 CMR 4.04(5). The Department's determination to allow a new or increased discharge shall be made in agreement with the federal, state, local or private entity recognized by the Department as having direct control of the water resource or governing water use; or

2. the discharge is dredged or fill material for qualifying activities in limited circumstances, after an alternatives analysis which considers the Outstanding Resource Water designation and further minimization of any adverse impacts. Specifically, a discharge of dredged or fill material is allowed only to the limited extent specified in 314 CMR 9.00 and 314 CMR 4.06(1)(d). The Department retains the authority to deny discharges which meet the criteria of 314 CMR 9.00 but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth

(4) Protection of Special Resource Waters. Certain waters of exceptional significance, such as waters in national or state parks and wildlife refuges, may be designated by the Department in 314 CMR 4.06 as Special Resource Waters (SRWs). The quality of these waters shall be maintained and protected so that no new or increased discharge and no new or increased discharge to a tributary to a SRW that would result in lower water quality in the SRW may be allowed, except where:

(a) the discharge results in temporary and short term changes in the quality of the SRW, provided that the discharge does not permanently lower water quality or result in water quality lower than necessary to protect uses; and

(b) an authorization is granted pursuant to 314 CMR 4.04(5).

(5) Authorizations.

(a) An authorization to discharge to waters designated for protection under 314 CMR 4.04(2) may be issued by the Department where the applicant demonstrates that:

1. The discharge is necessary to accommodate important economic or social development in the area in which the waters are located;

2. No less environmentally damaging alternative site for the activity, receptor for the disposal, or method of elimination of the discharge is reasonably available or feasible;

4.04: continued

3. To the maximum extent feasible, the discharge and activity are designed and conducted to minimize adverse impacts on water quality, including implementation of source reduction practices; and

4. The discharge will not impair existing water uses and will not result in a level of water quality less than that specified for the Class.

(b) An authorization to discharge to the narrow extent allowed in 314 CMR 4.04(3) or 314 CMR 4.04(4) may be granted by the Department where the applicant demonstrates compliance with 314 CMR 4.04(5)(a)2. through 314 CMR 4.04(5)(a)4.

(c) Where an authorization is at issue, the Department shall circulate a public notice in accordance with 314 CMR 2.06. Said notice shall state an authorization is under consideration by the Department, and indicate the Department's tentative determination. The applicant shall have the burden of justifying the authorization. Any authorization granted pursuant to 314 CMR 4.04 shall not extend beyond the expiration date of the permit.

(d) A discharge exempted from the permit requirement by 314 CMR 3.05(4) (discharge necessary to abate an imminent hazard) may be exempted from 314 CMR 4.04(5) by decision of the Department.

(e) A new or increased discharge specifically required as part of an enforcement order issued by the Department in order to improve existing water quality or prevent existing water quality from deteriorating may be exempted from 314 CMR 4.04(5) by decision of the Department.

(6) The Department applies its Antidegradation Implementation Procedures to point source discharges subject to 314 CMR 4.00.

(7) Discharge Criteria. In addition to the other provisions of 314 CMR 4.00, any authorized discharge shall be provided with a level of treatment equal to or exceeding the requirements of the Massachusetts Surface Water Discharge Permit Program (314 CMR 3.00). Before authorizing a discharge, all appropriate public participation and intergovernmental coordination shall be conducted in accordance with Permit Procedures (314 CMR 2.00).

4.05: Classes and Criteria

(1) Classes and Uses. The surface waters of the Commonwealth shall be segmented and each segment assigned to one of the Classes listed in 314 CMR 4.05(3) and (4). Each class is identified by the most sensitive, and therefore governing, water uses to be achieved and protected. Surface waters may be suitable for other beneficial uses, but shall be regulated by the Department to protect and enhance the existing and designated uses.

In accordance with 314 CMR 4.03(4), the Department may designate a partial use subcategory for these Classes. A partial use designation may be appropriate where waters are impacted by combined sewer overflows or stormwater discharges. Partial use is described in 314 CMR 4.06(1)(d)11.

(2) Criteria. Minimum criteria for each Class accompany each class description. Additional minimum criteria for all surface waters are listed in 314 CMR 4.05(5). Provided that all existing and designated uses are protected, the Department may establish site specific criteria as alternative minimum criteria. Such site specific numerical criteria shall supersede the otherwise applicable minimum numerical criteria in 314 CMR 4.00. Site specific numerical criteria also may supplement any of the narrative criteria in 314 CMR 4.00. Should the Department develop site specific numerical criteria for any pollutant that is the primary cause of nonattainment of any criteria in 314 CMR 4.00, the Department may determine that such site specific criteria supersede other criteria in 314 CMR 4.00. The Department may establish site specific criteria for a segment or segments of a water, for an entire water, or for a group of waters with similar physical, chemical or biological qualities. The Department may establish site specific hydrologic conditions at which criteria are applied. The Department will adopt any such site specific criteria as revisions to 314 CMR 4.00 in accordance with M.G.L. c. 30A.

Criteria for segments designated for partial use in 314 CMR 4.06 shall be site specific but, to the maximum extent feasible, shall be the same as the criteria assigned to the Class. For segments so designated because of the impacts of CSO or stormwater discharges, criteria may depart from the criteria assigned to the Class only to the extent necessary to accommodate the technology based treatment limitations of the CSO or stormwater discharges.

4.05: continued

(3) Inland Water Classes.

(a) Class A. These waters include waters designated as a source of public water supply and their tributaries. They are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters.

1. Dissolved Oxygen. Shall not be less than 6.0 mg/l in cold water fisheries and not less than 5.0 mg/l in warm water fisheries. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 68° F (20° C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring. Where a reproducing cold water aquatic community exists at a naturally occurring higher temperature, the temperature necessary to protect the community shall not be exceeded and natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C); and

b. natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.

3. pH. Shall be in the range of 6.5 through 8.3 standard units but not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria.

a. At water supply intakes in unfiltered public water supplies: either fecal coliform shall not exceed 20 fecal coliform organisms per 100 ml in all samples taken in any six month period, or total coliform shall not exceed 100 organisms per 100 ml in 90% of the samples taken in any six month period, If both fecal coliforn and total coliform are measured, then only the fecal coliform criterion must be met. More stringent regulations may apply under the Massachusetts Drinking Water regulations, 310 CMR 22.00 (*see* 314 CMR 4.06(1)(d)1.);

b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: where E. coli is the chosen indicator**,** the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml;

c. for other waters and, during the non bathing season, for waters at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: the geometric mean of all E. coli samples taken within the most recent six months shall not exceed 126 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of all enterococci samples taken within the most recent six months shall not exceed 33 colonies per 100 ml typically based on a minimum of five samples, and no single sample shall exceed 61 colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and

d. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(3)(a)4.b. and 4.05(3)(a)4.c. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

4.05: continued

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil and grease, petrochemicals and other volatile or synthetic organic pollutants.

8. Taste and Odor. None other than of natural origin.

(b) Class B. These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

1. Dissolved Oxygen.

a. Shall not be less than 6.0 mg/l in cold water fisheries and not less than 5.0 mg/l in warm water fisheries. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 68°F (20°C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring. Where a reproducing cold water aquatic community exists at a naturally occurring higher temperature, the temperature necessary to protect the community shall not be exceeded and the natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed 3°F (1.7°0C) in rivers and streams designated as cold water fisheries nor 5°F (2.8°C) in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month); in lakes and ponds the rise shall not exceed 3°F (1.7°0C) in the epilimnion (based on the monthly average of maximum daily temperature);

b. natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;

c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C.§1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. §1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA §401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria.

a. At bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: where E. coli is the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml; alternatively, where enterococci are the chosen indicator, the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies per 100 ml and no single sample taken during the bathing season shall exceed 61 colonies per 100 ml;

4.05: continued

b. for other waters and, during the non bathing season, for waters at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010: the geometric mean of all E. coli samples taken within the most recent six months shall not exceed 126 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 235 colonies per 100 ml; alternatively, the geometric mean of all enterococci samples taken within the most recent six months shall not exceed 33 colonies per 100 ml typically based on a minimum of five samples and no single sample shall exceed 61 colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and

c. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact bacteria criteria in 314 CMR 4.05(3)(b)4.a. and 4.05(3)(b)4.b. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this Class.

7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor. None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(c) Class C. These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. These waters shall be suitable for the irrigation of crops used for consumption after cooking and for compatible industrial cooling and process uses. These waters shall have good aesthetic value.

1. Dissolved Oxygen.

a. Shall not be less than 5.0 mg/l at least 16 hours of any 24-hour period and not less than 3.0 mg/l at any time. Where natural background conditions are lower, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 85°F (29.4°C) nor shall the rise due to a discharge exceed 5°F (2.8°C);

b. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;

c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G..L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 9.0 standard units and not more than 1.0 standard unit outside of the natural backgound range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4.05: continued

4. Bacteria. The geometric mean of all E. coli samples taken within the most recent six months shall not exceed 630 colonies per 100 ml typically based on a minimum of five samples, and 10% of such samples shall not exceed 1260 colonies per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this Class.

7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor - None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(4) Coastal and Marine Classes

(a) Class SA. These waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.

In the case of a water intake structure (IS) at a desalination facility, the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the IS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with the narrative and numerical criteria and protection of existing and designated uses.

1. Dissolved Oxygen. Shall not be less than 6.0 mg/l. Where natural background conditions are lower, DO shall not be less than natural background. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 85°F (29.4°C) nor a maximum daily mean of 80°F (26.7°0C), and the rise in temperature due to a discharge shall not exceed 1.5°0F (0.8°0C);

b. there shall be no change from natural background that would impair any uses assigned to this class including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;

c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4.05: continued

4. Bacteria.

a. Waters designated for shellfishing: fecal coliform shall not exceed a geometric mean Most Probable Number (MPN) of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 28 per 100 ml, or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the *Guide For The Control of Molluscan Shellfish* (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(5));

b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010, no single enterococci sample taken during the bathing season shall exceed 104 colonies per 100 ml, and the geometric mean of the five most recent samples taken within the same bathing season shall not exceed a geometric mean of 35 enterococci colonies per 100 ml. In non bathing beach waters and bathing beach waters during the non bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken within the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and

c. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(4)(a)4.b. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil and grease and petrochemicals.

8. Taste and Odor. None other than of natural origin.

(b) Class SB. These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.

In the case of a water intake structure (IS) at a desalination facility, the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G.L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the IS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with the narrative and numerical criteria and protection of existing and designated uses.

1. Dissolved Oxygen. Shall not be less than 5.0 mg/l. Seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. Where natural background conditions are lower, DO shall not be less than natural background.

2. Temperature.

a. Shall not exceed 85°F (29.4°C) nor a maximum daily mean of 80°0F (26.7°C), and the rise in temperature due to a discharge shall not exceed 1.5°F (0.8°C) during the summer months (July through September) nor 4°0F (2.2°0C) during the winter months (October through June);

b. there shall be no changes from natural background that would impair any uses assigned to this class including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;

c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

4.05: continued

d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G..L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria.

a. Waters designated for shellfishing shall not exceed a fecal coliform median or geometric mean MPN of 88 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 260 per 100 ml or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the *Guide For The Control of Molluscan Shellfish* (more stringent regulations may apply, *see* 314 CMR 4.06(1)(d)(5));

b. at bathing beaches as defined by the Massachusetts Department of Public Health in 105 CMR 445.010, no single enterococci sample taken during the bathing season shall exceed 104 colonies per 100 ml and the geometric mean of the five most recent samples taken within the same bathing season shall not exceed 35 enterococci colonies per 100 ml. In non bathing beach waters and bathing beach waters during the non bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all of the samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department; and

c. consistent with Massachusetts Department of Public Health regulations for bathing beaches, the single sample maximum values in the primary contact recreation bacteria criteria in 314 CMR 4.05(4)(b)4.b. also are for use in the context of notification and closure decisions.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor. None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(c) Class SC. These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. They shall also be suitable for certain industrial cooling and process uses. These waters shall have good aesthetic value.

1. Dissolved Oxygen. Shall not be less than 5.0 mg/l at least 16 hours of any 24-hour period and not less than 4.0 mg/l at any time. Where natural background conditions are lower, DO shall not be less than natural background. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained.

2. Temperature.

a. Shall not exceed 85°F (29.4C) nor shall the rise due to a discharge exceed 5°F (2.8°C);

b. there shall be no change from natural background conditions that would impair any use assigned to this class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms;

4.05: continued

c. alternative effluent limitations established in connection with a variance for a thermal discharge issued under 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00 are in compliance with 314 CMR 4.00. As required by 33 U.S.C. § 1251 (FWPCA, § 316(a)) and 314 CMR 3.00, for permit and variance renewal, the applicant must demonstrate that alternative effluent limitations continue to comply with the variance standard for thermal discharges; and

d. in the case of a cooling water intake structure (CWIS) regulated by EPA under 33 U.S.C. § 1251 (FWPCA § 316(b)), the Department has the authority under 33 U.S.C. § 1251 (FWPCA § 401), M.G..L. c. 21, §§ 26 through 53 and 314 CMR 3.00 to condition the CWIS to assure compliance of the withdrawal activity with 314 CMR 4.00, including, but not limited to, compliance with narrative and numerical criteria and protection of existing and designated uses.

3. pH. Shall be in the range of 6.5 through 9.0 standard units and not more than 0.5 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.

4. Bacteria. The geometric mean of all enterococci samples taken within the most recent six months shall not exceed 175 colonies per 100 ml, typically based on the five most recent samples, and 10% of such samples shall not exceed 350 enterococci colonies per 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.

5. Solids. These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

6. Color and Turbidity. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class.

7. Oil and Grease. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. Taste and Odor. None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.

(5) Additional Minimum Criteria Applicable to all Surface Waters.

(a) Aesthetics. All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

(b) Bottom Pollutants or Alterations. All surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.

(c) Nutrients. Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control.

(d) Radioactivity. All surface waters shall be free from radioactive substances in concentrations or combinations that would be harmful to human, animal or aquatic life or the most sensitive designated use; result in radionuclides in aquatic life exceeding the recommended limits for consumption by humans; or exceed Massachusetts Drinking Water Regulations as set forth in 310 CMR 22.09.

4.05: continued

(e) Toxic Pollutants. All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. For pollutants not otherwise listed in 314 CMR 4.00, the *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher. Where the Department determines that naturally occurring background concentrations are higher, those concentrations shall be the allowable receiving water concentrations. The Department shall use the water quality criteria for the protection of aquatic life expressed in terms of the dissolved fraction of metals when EPA's 304(a) recommended criteria provide for use of the dissolved fraction. The EPA recommended criteria based on total recoverable metals shall be converted to dissolved metals using EPA's published conversion factors. Permit limits will be written in terms of total recoverable metals. Translation from dissolved metals criteria to total recoverable metals permit limits will be based on EPA's conversion factors or other methods approved by the Department. The Department may establish site specific criteria for toxic pollutants based on site specific considerations. Site specific criteria, human health risk levels and permit limits will be established in accordance with the following:

1. Site Specific Criteria: Where EPA recommended criteria for a specific pollutant are not available or where the Department determines that they are invalid due to site specific physical, chemical or biological considerations, the Department shall use a site specific criterion as the allowable receiving water concentration for the affected waters. In all cases, at a minimum, site specific criteria shall not exceed safe exposure levels determined by toxicity testing using methods approved by the Department. The Department will adopt any such site specific criteria as revisions to 314 CMR 4.00 in accordance with M.G.L. c. 30A.

2. Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00. When this goal is not attainable, the Department will use a goal of 10-6 as the acceptable excess lifetime cancer risk level for individual carcinogens.

3. Accumulation of Pollutants. Where appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that:

a. are toxic to humans, wildlife or aquatic life; or

b. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption.

4. Public Notice. Where EPA recommended criteria are used to establish water quality based effluent limitations, the effluent limitations shall be documented and subject to full intergovernmental coordination and public participation as set forth in 314 CMR 2.00 "Permit Procedures".

4.06: Basin Classification and Maps

(1) Classification. For the purposes of applying 314 CMR 4.00, the surface waters of the Commonwealth are classified as shown in 314 CMR 4.06. The following terms used in the classification tables have the following meanings:

(a) Boundary. a description of the boundaries of the segment being classified.

(b) Mile Points. for rivers and streams, the upstream and downstream mile points; it is also used to indicate the point at which a tributary enters the main stem of a river or stream.

(c) Class. the appropriate water use Class for each segment in accordance with 314 CMR 4.05.

(d) Qualifiers. indicates special considerations and uses applicable to the segment that may affect the application of criteria or antidegradation provisions of 314 CMR 4.00.

4.06: continued

1. Public Water Supply - these waters may be used as a source of public drinking water in accordance with the Massachusetts Drinking Water Regulations, 310 CMR 22.00. They may be subject to more stringent regulation in accordance with the Massachusetts Drinking Water Regulations, 310 CMR 22.00, adopted pursuant to M.G.L. c. 111, and may have restricted use. These waters are designated for protection as Outstanding Resource Waters under 314 CMR 4.04(3). No discharge of dredged or fill material into wetlands or waters of the Commonwealth shall be allowed within 400 feet of the high water mark of a Class A surface water (exclusive of its tributaries), unless conducted by a public water system under 310 CMR 22.00, conducted by a public agency or authority for the maintenance or repair of existing public roads or railways, or conducted by a person granted a variance pursuant to 314 CMR 9.08. Any maintenance or repair of existing public roads or railways shall also include the removal or implementation of the highest and best practical method of treatment of stormwater discharges in accordance with 314 CMR 4.04(3) within the reasonable vicinity of the activity. Maintenance or repair of an existing public road or railway shall not include substantial reconstruction, substantial enlargement, replacement or realignment of any portion of the roadway or railway. The Department will presume that any reconstruction or enlargement is substantial and requires a variance under 314 CMR 9.08. The Department may determine that a public agency or authority has overcome the presumption based upon a showing that the activity proposed within 400 feet of the high water mark of a Class A surface water will result in the loss of less than 5000 square feet cumulatively of bordering and isolated vegetated wetlands and land under water, and that the entirety of the activity will improve water quality, or maintain water quality if removal or implementation of the highest and best practical method of treatment of stormwater discharges already has been achieved.

2. Outstanding Resource Waters - denotes those waters, other than Class A Public Water Supplies and their tributaries, that are designated for protection as Outstanding Resource Waters under 314 CMR 4.04(3). Outstanding Resource Waters are assigned at the discretion of the Department, as appropriate. An application to nominate a waterbody as an Outstanding Resource Water must be submitted in accordance with applicable Department application procedures and requirements.

3. Special Resource Waters – denotes waters that are designated for protection as Special Resource Waters under 314 CMR 4.04(4). Special Resource Waters are assigned at the discretion of the Department, as appropriate.

4. High Quality Waters - denotes certain waters designated for protection under 314 CMR 4.04(2) (Protection of High Quality Waters). Other waters as described in 314 CMR 4.04(2) also are high quality, although they are not necessarily denoted as high quality in the classification tables.

5. Shellfishing - these waters are subject to more stringent regulation in accordance with the rules and regulations of the Massachusetts Division of Marine Fisheries pursuant to M.G.L. c. 130, § 75. These include applicable criteria of the National Shellfishing Sanitation Program. Approval for use of areas designated for shellfishing is issued by the Massachusetts Division of Marine Fisheries. To determine whether a particular water designated for shellfishing also is approved for use, the Massachusetts Division of Marine Fisheries and/or the appropriate local authority (usually the Shellfish Department) should be contacted.

6. Treated Water Supply - denotes those Class B waters that are used as a source of public water supply after appropriate treatment. These waters may be subject to more stringent site-specific criteria established by the Department as appropriate to protect and maintain the use. *See*, also, 310 CMR 22.00.

7. Cold Water - in these waters dissolved oxygen and temperature criteria for cold water fisheries apply. Certain waters not designated as cold water in 314 CMR 4.00 may contain habitat that supports a cold water fish population and, in such cases, the cold water fish population and habitat shall be protected and maintained as existing uses. The Massachusetts Division of Fisheries and Wildlife is responsible for identifying cold water fish populations that meet their protocol regardless of whether or not the water meets the cold water criteria in 314 CMR 4.00. Where a cold water fish population has been identified by the Division of Fisheries and Wildlife as meeting their protocol, but the water has not been documented to meet the cold water criteria in 314 CMR 4.00, the Department will protect the existing cold water fish population and its habitat as an existing use.

8. Warm Water - in these waters dissolved oxygen and temperature criteria for warm water fisheries apply.

4.06: continued

9. Aquatic Life - in these waters Class C dissolved oxygen and temperature criteria apply. This designation is made only where natural background conditions prevent the attainment of a "higher use" designation.

10. CSO – these waters are identified as impacted by the discharge of combined sewer overflows; however, a long term control plan has not been approved or fully implemented for the CSO discharges.

11. Partial Use, B(CSO) and SB(CSO) - these waters occasionaly are subject to short-term impairment of swimming or other recreational uses due to untreated CSO discharges in a typical year, and the aquatic life community may suffer adverse impact yet is still generally viable. In these waters, the uses for Class B and Class SB waters are maintained after the implementation of long term control measures described in the approved CSO long term control plan, except as identified in such plan. The Department may designate a segment partial use, B(CSO) or SB(CSO), provided that:

a. a Department approved long term control plan provides justification for the overflows;

b. the Department finds through a use attainability analysis, and EPA concurs, that achieving a greater level of CSO control is not feasible for one of the reasons specified at 314 CMR 4.03(4);

c. existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected; and

d. public notice is provided through procedures for permit issuance under M.G.L. c. 21, §§ 26 through 53 and regulations promulgated pursuant to M.G.L. c. 30A. In addition, the Department will publish a notice in the *Environmental Monitor*. Other combined sewer overflows may be eligible for a variance granted pursuant to 314 CMR 4.03(4). When a variance is not appropriate, partial use may be designated for the segment after public notice and opportunity for a public hearing in accordance with M.G.L. c. 30A.

12. Vernal Pools. No point source discharge shall be allowed to a vernal pool certified by the Massachusetts Division of Fisheries and Wildlife; and no discharge of dredged or fill material shall be allowed to a vernal pool certified by the Massachusetts of Division of Fisheries and Wildlife, unless a variance is granted under 314 CMR 9.08.

(e) Treated Water Supply, Public Water Supply, and Shellfishing are assigned at the discretion of the Department, as appropriate.

(f) Cold Water, Warm Water and Aquatic Life are considered consistent with the national goal uses and are assigned whenever attainable, as applicable.

(2) Wetlands. Wetlands bordering Class A Outstanding Resource Waters are designated Class A Outstanding Resource Waters. Vernal pools are designated Class B Outstanding Resource Waters. All wetlands bordering other Class B, SB or SA Outstanding Resource Waters are designated as Outstanding Resource Waters to the boundary of the defined area. All other wetlands are designated Class B, High Quality Waters for inland waters and Class SA, High Quality Waters for coastal and marine waters.

(3) Active and Inactive Reservoirs. All active and inactive reservoirs approved by the Department's Drinking Water Program after December 29, 2006 as a source of public water supply are designated Class A, Outstanding Resource Waters, regardless of whether they are listed in the tables to 314 CMR 4.00.

(4) Other Waters. Unless otherwise designated in 314 CMR 4.06 or unless otherwise listed in the tables to 314 CMR 4.00, other waters are Class B, and presumed High Quality Waters for inland waters and Class SA, and presumed High Quality Waters for coastal and marine waters. Inland fisheries designations and coastal and marine shellfishing designations for unlisted waters shall be made on a case-by-case basis as necessary.

(5) Figures and Tables. For the purpose of applying the Surface Water Quality Standards, the surface waters are classified as shown in the following figures and tables, which are part of 314 CMR 4.00. Segments and their classifications are shown on the figures for general orientation. In cases of inconsistency between the tables and the figures, the information contained in the tables controls.

4.06: continued

(6) Tributaries. Tributaries to a Class A public water supply include, but are not limited to, waterbodies from which water is manually diverted to the Class A public water supply.

(7) Site Specific Criteria. Site specific numerical criteria appear in the last table in 314 CMR 4.00.

For all tables and figures, please follow this link: www.mass.gov/dep/water/laws/tblfig.pdf to view. If a browser window does not open for you, please copy and paste the above link into your browser's address bar.