

Chapter 586: RULES PERTAINING TO DISCHARGES TO CLASS A WATERS

SUMMARY: This rule establishes criteria to define what constitutes effluent quality necessary to ensure the standards for class A waters are met.

1. **Scope.** Under 38 M.R.S.A. section 464 discharges to class A waters must be equal to or better than the receiving water in order to ensure that habitat, aquatic life, and bacteria are as naturally occurs. The following sections define effluent criteria necessary to ensure these requirements are met.
2. **Criterion for pH.** The pH of the discharged effluent shall not be greater than or less than a 0.2 pH unit difference from that of the seasonal median value of the receiving water upstream of the discharge.
3. **Criterion for plant nutrients.** Nutrients in the discharged effluent shall not exceed the seasonal median concentration of nutrients in the receiving water, or a value demonstrated by the applicant to be better than the seasonal median and which does not cause the aquatic life to be other than as naturally occurs.

The effluent shall not significantly alter the particle size distribution of the downstream floral community or otherwise alter the natural character of the downstream biotic community.

4. **Criterion for temperature.** The temperature of the discharged effluent shall not vary by more than 0.5°F from the temperature of the receiving water at the time of discharge.
5. **Criterion for dissolved oxygen.** In addition to the requirements of 38 M.R.S.A. section 465(2)(B) the dissolved oxygen content of the discharged effluent shall not be less than that of the receiving water at the time of discharge.
6. **Criteria for other water quality parameters.** Except as provided above, the concentration in the discharged effluent of biochemical oxygen demand and all constituents listed in Quality Criteria for Water 1986 (EPA 440/5-86-001) shall not exceed the seasonal median concentration as measured in the receiving water upstream of the discharge or prior to a discharge where a suitable upstream site is not available.
7. **Establishment of seasonal values.** For the purpose of establishing seasonal values in the receiving water pursuant to Sections 2, 3, and 6 of this rule, an applicant will provide data based on seasons and sample frequencies approved by the Department on a case by case basis.

AUTHORITY: 38 M.R.S.A., Section 343-A, 464(5), and 465(2)

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BASIS STATEMENT

These criteria provide a definition of effluent quality that is equal to or better than the receiving water which can be measured and evaluated for the purpose of permitting discharge facilities. The section of law (38 M.R.S.A. Section 465(2)(C) which contains the equal to or better than language creates certain regulatory ambiguities. While the phrase 'equal to' has an empirical basis which can readily expressed, the phrase 'better than' implies an allowance for change, but does not assign where any benefit can be placed. Certain human benefits may have negative ecological consequences or vice versa. This regulation, therefore, relies on criteria equal to measured ambient values in the receiving water and allows for variation from these measured equivalencies only to account for natural or analytical variances and where these variances are known or expected not to cause any negative impacts either to the ecological balance or to human values. Certain criteria rely on a seasonal time span to specify the period of equivalency. Because water chemistry can vary from moment to moment, this regulation allows the Department to designate appropriate seasonal periods within which data are gathered.

The pH of the water may affect biological communities by either increases or decreases. pH is known to fluctuate, sometimes substantially over brief periods. A sustained variation of + 0.2 pH units from the seasonal median concentrations is not significant and is not expected to have any measurable effect on the biotic community. A measure of central tendency, the median, is used to define what is equal. By using a seasonal median value, the criteria is not strongly affected by widely outlying values. The allowed variation is consistent with natural variations which occur.

This rule limits the discharge of nutrients to the seasonal median concentrations. It is recognized however that impacts from nutrients are dependent on Liebig's Law of the Minimum, that productivity is limited as long as the limiting nutrient is controlled. This rule allows the discharger to exceed the seasonal median concentration for any nutrient if it is demonstrated that a better condition can occur and that the biological community will still be as naturally occurs. A further constraint is placed on the discharger which prohibits significant alterations of the particle size of algae or other organic growths which can create a negative impact on the community.

Temperature of the effluent is limited to a variation of no more 0.5°F from the temperature of the receiving water. This value is consistent with natural daily fluctuations and is a condition to which the biotic community is well adapted.

The dissolved oxygen content of the effluent shall be equal or exceed that of the receiving water at all times but shall never be less than 7 parts per million or 75% saturation as expressed in Section 465(2)(B) of the statute.

Discharge of all other substances of concern is controlled by Section 6. The concentration in the effluent shall not exceed the seasonal median concentration for

any of these constituents in the receiving water. The seasonal median value is chosen for those reasons stated in the above discussion for pH.