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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

FEB 28 1985

MEMORANDUM

SUBJECT: Selection of Water Quality Criteria in State Water Quality Standards

TO: Water Division Directors
Regions I - X

This memorandum establishes our policy regarding the selection of appropriate water quality criteria for toxic pollutants in State water quality standards. The policy is issued in support of the primary emphasis on the control of toxic pollutants which should occur during the next round of standards reviews.

For toxic pollutants where EPA national criteria exist, either use of or adjustments to the national criteria using EPA's criteria development and modification guidance are scientifically acceptable approaches for a State to take in developing criteria for inclusion in standards. Deviations from the EPA approaches are allowed, but such deviations must have justifications which are scientifically defensible and adequately documented. If a State selects a criterion which is relatively "close" to an EPA-recommended value, if its justification is weak, biased, or otherwise irrational or unreasonable, then that criterion is unacceptable. It is insufficient for a State to adopt a numerical criterion close to the EPA recommendation and justify that number simply on the basis of being within the variability inherent in the criterion's formulation.

Regarding toxic pollutants for which EPA criteria have not been developed, a State may use or develop toxicity data bases in a manner consistent with EPA's criteria development and modification guidance in order to generate criteria. A State may alternatively develop criteria values based on adequate data obtained from relevant aquatic field studies, available literature, or specific bioassay tests, or, where insufficient data are available to establish criteria directly, may develop criteria based on appropriate bioassay testing procedures and applying appropriate application factors to the pollutant's LC_{50} (or other) value. The data, testing procedures, and application factors employed to develop the criteria should reflect the nature of the pollutant (e.g., persistency, the most

sensitive indigenous organisms, the acute and chronic protection needs of the water body in question, and must be adequately *documented in a criteria rationale.*

I expect our Regional coordinators to carefully review the criteria justifications submitted by the States. I want to emphasize that Section 131.11(a)(1) of the Water Quality Standards Regulation requires that all criteria which are adopted "...must be based on sound scientific rationale...." If the States fail to provide acceptable criteria or an adequate description of their rationale, and Regional attempts to assist the States to improve the criteria also fail, then EPA will disapprove those unacceptable criteria and promulgate acceptable substitutes. We suggest that the States monitor whether the adopted criteria are adequately protective of designated uses once they are implemented.

If a State decides not to include implementation methodologies for narrative criteria as part of their water quality standards, but rather opts to include such information in guidance or planning documents, then the State must ensure there will be adequate opportunity for public review and EPA review and approval. This can be accomplished by including such information in documents generated by the State in response to the Water Quality Planning and Management Regulations (40 CFR Part 35).

I am also strongly encouraging the States to include both chronic and acute concentration values for criteria, where appropriate, to better reflect the different tolerances of aquatic systems to the inherent variability in pollutant concentrations and the toxicological characteristics of pollutants. However, in those instances where a State prefers to adopt a single-number criterion when both acute and chronic toxicity values are available, the State must demonstrate that the selected criterion will protect against both chronic <u>and</u> acute effects.

For example, applying an "acute" toxicity value as a "not to be exceeded" criterion, *alone, is unacceptable because it cannot* ensure that aquatic chronic protection needs will be satisfied. Applying a "chronic" value as an average criterion, alone, may not adequately protect against possible acute toxic conditions, especially if the averaging period is relatively long. Applying a "chronic" value as a "not to be exceeded" criterion <u>will</u> provide both acute and chronic protection. However, such a criterion may be somewhat more stringent than necessary to protect water quality (if such criterion influences water quality based effluent limits for POTWS, it may also lead to adverse funding determinations for Construction Grant projects, in light of EPA's AT Review Policy). In any case, whenever a numerical criterion is adopted, the value should be clearly identified as to whether it is a *maximum* ("not

to be exceeded") or average concentration and, if an average, its averaging period. EPA is currently developing recommendations for the maximum period over which exposure concentrations should be averaged for protection against acute and chronic effects, and for acceptable recurrence frequencies of acute and chronic exposures. This exposure and recurrence information should assist you and the States on selecting the most appropriate criteria.

Edwin L. Johnson, Director
Office of Water Regulations
and Standards

cc: Regional WQS Coordinators
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William Jordan (EN-336)