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

JUL 24 1985

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Toxicity Testing Requirements in Municipal Permits

FROM: Martha G. Prothro, Director
Permits Division (EN-336)

TO: Water Management Division Directors
Regions I - X
NPDES State Directors

EPA has conducted effluent toxicity testing case studies at several industrial and municipal discharge sites nationwide, including both large and small publicly owned treatment works (POTWs). On-site sampling has ranged from a few days to a month. The preliminary results of these studies have revealed both acute and chronic toxicity problems at some POTWs, even those that are discharging very low concentrations of BOD and suspended solids. The toxicity results are surprising because of the high frequency of POTWs with toxic effluents and the magnitude of their toxicity. Because of these preliminary results, we urge you to include toxicity testing requirements in reissued and modified permits for municipal dischargers.

Water Quality-Based Toxics Control

The Agency procedures and rationale for toxics control are contained in the Office of Water Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants that was published in the Federal Register on March 9, 1984. The policy covers toxic discharges from both municipal and industrial point sources. The policy encourages toxicity tests and development of permit limits on effluent toxicity (where appropriate) to address violations or projected violations of water quality standards.

All States currently have narrative water quality language which prohibit the discharge of "toxic substances in toxic amounts." Effluent toxicity testing (biomonitoring) can be used to implement these narrative standards by requiring toxicity testing and permit limits on biological toxicity as a complement to chemical specific pollutant limits. Detailed procedures for developing water quality-based requirements for both whole effluent toxicity and specific

toxic pollutants are presented in the draft Technical Support Document for Water Quality-Based Toxics Control, which is expected to be published in final form shortly. Detailed procedures for acute toxicity tests are presented in Methods for Measuring the Acute Toxicity of Effluents to Aquatic Organisms (EPA-600/4-85-013) and for chronic tests in Methods for Measuring the Chronic Toxicity of Effluents to Freshwater Organisms (EPA-600/4-85-014).

Expanded Use of Toxicity Testing in Municipal Permits

In accordance with EPA's policy for water quality-based toxics control, Regions and States should begin to establish toxicity testing requirements in municipal permits and to establish toxicity-based permit limitations, as appropriate. Suggested candidates are POTWs with limited instream dilution at critical low flow periods, areas of known water quality impact problems due to toxicity, and POTWs that receive significant industrial flow.

Toxicity testing requirements should be based on the Technical Support Document for Water Quality-Based Toxics Control. This manual recommends a series of monthly toxicity screening tests based on a minimum of three test species and affirms the usefulness of the 7-day Ceriodaphnia sp. as one of these test organisms. Additional testing requirements, toxicity reduction plans, local pretreatment limits, and/or toxicity limits in the permit should be established if toxicity is observed in the screening tests.

The principal toxics control mechanism for municipal dischargers has been the control of toxic pollutants from industrial indirect dischargers through the national pretreatment program. Requirements for control of toxic discharges to POTWs have been implemented in the form of uniform national categorical pretreatment standards set by EPA and local limits set by individual POTWs or States. Toxicity testing is an important tool for assessing the overall effectiveness of the pretreatment program. It may also be used as a basis to establish pretreatment local limits requirements where national categorical standards do not adequately address local toxics problems.

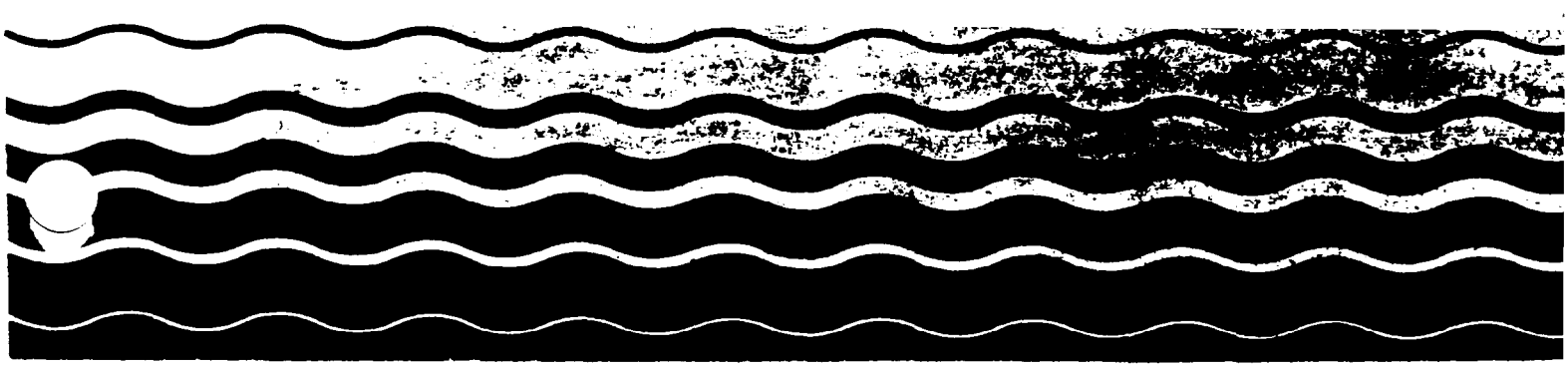
Toxics control from municipal point sources requires immediate attention by Regional, State and Headquarters personnel. We will be providing additional technical information, workshops or other materials to Regions and States during FY 86. Future permit writer workshops will also address toxics control through permits.

Please contact me (755-2545) or Jim Gallup (755-0750) if you have any questions or suggestions on the use of toxicity testing requirements in POTW permits.

cc: Rebecca Hanmer (EN-335)
J. William Jordan (EN-338)
Patrick Tobin (WH-585)
Thomas O'Farrell (WH-551)

EPA

Technical Support Document for Water Quality-based Toxics Control



TECHNICAL SUPPORT DOCUMENT FOR

WATER QUALITY-BASED TOXICS CONTROL

July, 1985

Office of Water Enforcement and Permits
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D. C. 20460

FOREWORD

The U. S. Environmental Protection Agency (EPA) and the State pollution control agencies have been charged with enforcing the laws regarding pollution of the natural environment. Environmental pollution is considered an urgent and continuing problem and, consequently, the laws grant considerable discretion to the control authorities to define environmental goals and develop the means to attain them. Establishing environmental tolerance levels and incorporating them in a decision making process entails a considerable amount of scientific knowledge and judgment. One area where scientific knowledge is rapidly changing concerns the discharge of toxic pollutants to the Nation's surface waters.

This document provides technical guidance for assessing and regulating the discharge of toxic substances to the waters of the United States. It was issued in support of a recent EPA policy initiative involving the application of biological and chemical assessment techniques to control toxic pollution. The recommendations contained in this document are not mandatory and are intended to be suggestions for approaching problems which tend to be complex and site-specific.

This document is expected to be revised periodically to reflect advances in this rapidly evolving area. Comments from users will be welcomed.

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