



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

FEB 2 1989

MEMORANDUM

OFFICE OF
WATER

SUBJECT: Whole-effluent Toxicity Sample Permitting and Enforcement Guidance

FROM: James R. Elder, Director
Office of Water Enforcement and Permits (EN-335)

TO: Regional Water Management Division Directors
State NPDES Program Directors

In recent months, the Office of Water Enforcement and Permits has been coordinating the efforts of an EPA/State workgroup composed of permitting, enforcement and legal counsel representatives to develop materials in support of our whole-effluent toxicity permitting and enforcement effort. Those materials were sent to the Regions for comment in October and included Basic Permitting Principles; draft boiler-plate language on a permit provision allowing petitions for relief from civil penalties; sample permit language for whole-effluent toxicity limits, Toxicity Reduction Evaluations, and special conditions; and permitting/enforcement scenarios.

Most of the materials, with the exception of the draft boiler-plate language, received general support. The Basic Permitting Principles for Whole Effluent Toxicity and the Compliance Monitoring and Enforcement Strategy for Toxics Control have already been issued by the Acting Assistant Administrator for Water and transmitted to the Regional Administrators (Attachment A). The Basic Permitting Principles are consistent with the recently proposed 304(l) regulations, and will help to avoid ambiguities that may arise in NPDES permits. As you will see, the Enforcement Strategy was revised from the December 1987 draft to reflect Regional/State comments as well as advances in technical documentation since that time. The Permitting Principles and Enforcement Strategy will serve as companion documents to the "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants" issued in 1984.

The sample toxicity permit language and the permitting and enforcement scenarios are attached in final form as guidance. The concepts contained in this guidance will also be reflected in the revisions being made to the Technical Support Document this year.

The sample toxicity permit language (Attachment B) is a compilation of limits, Toxicity Reduction Evaluation schedules, and special conditions that would be part of a permit. Each example is meant as guidance; it is not meant to be used verbatim as boiler plate language in permits, but should be adapted to the specific case at hand.

The permitting and enforcement scenarios (Attachment C) give examples of the permitting and enforcement mechanisms available for the control of whole-effluent toxicity. These scenarios illustrate that the toxics control effort fits into the ongoing NPDES program as it currently exists. As with the rest of the NPDES program, limitations are set by permits. Schedules may be set by permits or, in response to permit violations, through enforcement actions. Information, including monitoring and toxicity identification evaluations, may be requested through the permit, an enforcement action, or a Section 308 letter or state equivalent.

The draft boiler plate language that was part of the original package sent for Regional review received much criticism from Regions and State workgroup members. The concept of relief from penalties assessed in enforcement actions was broadly believed to be outside the realm of EPA permitting authority. As a result of numerous comments, the concept of enforcement discretion in assessing penalties has been incorporated as part of the Compliance Monitoring and Enforcement Strategy for Toxics Control. Enforcement discretion will allow equitable defense reasoning to influence penalties assessed against permittees that have done everything technically feasible, but are unable to identify or control toxicity. These instances are believed to be rare and have not occurred in our present experience.

If you have any questions on the attached materials, please call either David Lyons or Rick Brandes of my staff at (FTS/202) 475-8310 or (FTS/202) 475-9525 respectively.

Attachments

cc: ASIWPCA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

January 25, 1989

OFFICE OF
WATERMEMORANDUM

SUBJECT: Whole Effluent Toxicity Basic Permitting Principles and Enforcement Strategy

FROM: Rebecca W. Hanmer, Acting Assistant Administrator
Office of Water

TO: Regional Administrators

Since the issuance of the "Policy for the Development of Water Quality-based Permit Limitations for Toxic Pollutants" in March of 1984, the Agency has been moving forward to provide technical documentation to support the integrated approach of using both chemical and biological methods to ensure the protection of water quality. The Technical Support Document for Water Quality-based Toxics Control (September, 1985) and the Permit Writer's Guide to Water Quality-based Permitting for Toxic Pollutants (July, 1987) have been instrumental in the initial implementation of the Policy. The Policy and supporting documents, however, did not result in consistent approaches to permitting and enforcement of toxicity controls nationally. When the 1984 Policy was issued, the Agency did not have a great deal of experience in the use of whole effluent toxicity limitations and testing to ensure protection of water quality. We now have more than four years of experience and are ready to effectively use this experience in order to improve national consistency in permitting and enforcement.

In order to increase consistency in water quality-based toxicity permitting, I am issuing the attached Basic Permitting Principles for Whole Effluent Toxicity (Attachment A) as a standard with which water quality-based permits should conform. A workgroup of Regional and State permitting, enforcement, and legal representatives developed these minimum acceptable requirements for toxicity permitting based upon national experience. These principles are consistent with the toxics control approach addressed in the proposed Section 304(1) regulation. Regions should use these principles when reviewing draft State permits. If the final Section 304(1) regulations include changes in this area, we will update these principles as necessary. Expanded guidance on the use of these principles will be sent out shortly by James Elder, Director of the Office of

Water Enforcement and Permits. This expanded guidance will include **sample** permit language and permitting/enforcement scenarios.

Concurrent with this issuance of the Basic Permitting Principles, I am issuing the Compliance Monitoring and Enforcement Strategy for Toxics Control (Attachment 2). This Strategy was developed by a workgroup of Regional and State enforcement representatives and has undergone an extensive comment period. The Strategy presents the Agency's position on the integration of toxicity control into the existing National Pollutant Discharge Elimination System (NPDES) compliance and enforcement program. It delineates the responsibilities of the permitted community and the regulatory authority. The Strategy describes our current efforts in compliance tracking and quality assurance of self-monitoring data from the permittees. It defines criteria for review and reporting of toxicity violations and describes the types of enforcement options available for the resolution of permit violations.

In order to assist you in the management of whole effluent , toxicity permitting, the items discussed above will join the 1984 Policy as Appendices to the revised Technical Support Document for Water Quality-based Toxics Control. To summarize, these materials are the Basic Permitting Principles, sample permit language, the concepts illustrated through the permitting and enforcement scenarios, and the Enforcement Strategy. I hope these additions will provide the needed framework to integrate the control of toxicity into the overall NPDES permitting program.

I encourage you and your staff to discuss these documents and the 1984 Policy with your States to further their efforts in the implementation of EPA's toxics control initiative.

If you have any questions on the attached materials, please contact James Elder, Director of the Office of Water Enforcement and Permits, at (FTS/202) 475-8488.

Attachments

cc: ASWIPCA
Water Management Division Directors

BASIC PERMITTING PRINCIPLES FOR WHOLE EFFLUENT TOXICITY

1. Permits must be protective of water quality.
 - a. At a minimum, all major permits and minors of concern must be evaluated for potential or known toxicity (chronic or acute if more limiting).
 - b. Final whole effluent toxicity limits must be included in permits where necessary to ensure that State Water Quality Standards are met. These limits must properly account for effluent variability, available dilution, and species sensitivity.
2. Permits must be written to avoid ambiguity and ensure enforceability.
 - a. Whole effluent toxicity limits must appear in Part I of the permit with other effluent limitations.
 - b. Permits contain generic re-opener clauses which are sufficient to provide permitting authorities the means to re-open, modify, or reissue the permit where necessary. Re-opener clauses covering effluent toxicity will not be included in the Special Conditions section of the permit where they imply that limit revision will occur based on permittee inability to meet the limit. Only schedules or other special requirements will be added to the permit.
 - c. If the permit includes provisions to increase monitoring frequency subsequent to a violation, it must be clear that the additional tests only determine the continued compliance status with the limit; they are not to verify the original test results.
 - d. Toxicity testing species and protocols will be accurately referenced/cited in the permit.
3. Where not in compliance with a whole effluent toxicity limit, permittees must be compelled to come into compliance with the limit as soon as possible.
 - a. Compliance dates must be specified.
 - b. Permits can contain requirements for corrective actions, such as Toxicity Reduction Evaluations (TREs), but corrective actions cannot be delayed pending EPA/State approval of a plan for the corrective actions, unless State regulations require prior approval. Automatic corrective actions subsequent to the effective date of a final whole-effluent toxicity limit will not be included in the permit.

Explanation of the Basic Permitting Principles

The Basic Permitting Principles present the minimum acceptable requirements for whole-effluent toxicity permitting. They begin with a statement of the goal of whole-effluent toxicity limitations and requirements: the protection of water quality as established through State numeric and narrative Water Quality Standards. The first principle builds on the Technical Support Document procedures and the draft Section 304(1) rule requirements for determining potential to violate Water Quality Standards. It requires the same factors be considered in setting whole-effluent toxicity based permits limits as are used to determine potential Water Quality Standards violations. It defines the universe of permittees that should be evaluated for potential violation of Water Quality Standards, and therefore possible whole-effluent limits, as all majors and minors of concern.

The second permitting principle provides basic guidelines for avoiding ambiguities that may surface in permits. Whole-effluent toxicity limits should be listed in Part I of the permit and should be derived and expressed in the same manner as any other water quality-based limitations (i.e., Maximum Daily and Average Monthly limits as required by Section 122.45(d)).

In addition, special re-opener clauses are generally not necessary, and may mistakenly imply that permits may be re-opened to revise whole-effluent limits that are violated. This is not to imply that special re-opener clauses are never appropriate. They may be appropriate in permits issued to facilities that currently have no known potential to violate a Water Quality Standard; in these cases, the permitting authority may wish to stress its authority to re-open the permit to add a whole-effluent limit in the event monitoring detects toxicity.

Several permittees have mistakenly proposed to conduct additional monitoring subsequent to a violation to "verify" their results. It is not possible to verify results with a subsequent test whether a new sample or a split-sample which has been stored (and therefore contains fewer volatiles) is used. For this reason, any additional monitoring required in response to a violation must be clearly identified as establishing continuing compliance status, not verification of the original violation.

The second principle also deals with the specification of test species and protocol. Clearly setting out the requirements for toxicity testing and analysis is best done by accurately referencing EPA's most recent test methods and approved equivalent State methods. In this way, requirements which have been published can be required in full, and further advances in technology and science may be incorporated without lengthy permit revisions.

The third and final permitting principle reinforces the responsibility of the permittee to seek timely compliance with the requirements of its NPDES permit. Once corrective actions have been identified in a TRE, permittees cannot be allowed to delay corrective actions necessary to comply with water quality-based whole effluent toxicity limitations pending Agency review and approval of voluminous reports or plans. Any delay on the part of the permittee or its contractors/agents is the responsibility of the permittee.

The final principle was written in recognition of the fact that a full-blown TRE may not be necessary to return a permittee to compliance in all cases, particularly subsequent to an initial TRE. As a permittee gains experience and knowledge of the operational influences on toxicity, TREs will become less important in the day to day control of toxicity and will only be required when necessary on a case-specific basis.

Background to the Compliance Monitoring and Enforcement Strategy for Toxics Control

The Compliance Monitoring and Enforcement Strategy for Toxics Control sets forth the Agency's strategy for tracking compliance with and enforcing whole-effluent toxicity monitoring requirements, limitations, schedules and reporting requirements.

The Strategy delineates the respective responsibilities of permittees and permitting authorities to protect water quality through the control of whole-effluent toxicity. It establishes criteria for the review of compliance data and the quarterly reporting of violations to Headquarters and the public. The Strategy discusses the integration of whole-effluent toxicity control into our existing inspection and quality assurance efforts. It provides guidelines on the enforcement of whole-effluent toxicity requirements.

The Strategy also addresses the concern many permittees share as they face the prospect of new requirements in their permit - the fear of indiscriminate penalty assessment for violations that they are unable to control. The Strategy recognizes enforcement discretion as a means of dealing fairly with permittees that are doing everything feasible to protect water quality. As indicated in the Strategy, this discretion deals solely with the assessment of civil penalties, however, and is not an alternative to existing procedures for establishing relief from State Water Quality Standards. The Strategy focuses on the responsibility of the Agency and authorized States to require compliance with Water Quality Standards and thereby ensure protection of existing water resources.

COMPLIANCE MONITORING AND ENFORCEMENT STRATEGY FOR TOXICS CONTROL

I. Background

Issuance of NPDES permits now emphasizes the control of toxic pollutants, by integrating technology and water quality-based permit limitations, best management practices for toxic discharges, sludge requirements, and revisions to the pretreatment implementation requirements. These requirements affect all major permittees and those minor permittees whose discharges may contribute to impairment of the designated use for the receiving stream. The goal of permitting is to eliminate toxicity in receiving waters that results from industrial and municipal discharges.

Major industrial and municipal permits will routinely contain water quality-based limits for toxic pollutants and in many cases whole effluent toxicity derived from numerical and narrative water quality standards. The quality standards to establish NPDES permit limits are discussed in the "Policy for the Development of Water Quality-based Permit Limits for Toxic Pollutants," 49FR 9016, March 9, 1984. The Technical Support Document for Water Quality-based Toxics Control, EPA #440/44-85032, September, 1985 and the Permit Writer's Guide to Water Quality-based Permitting for Toxic Pollutants, Office of Water, May, 1987, provide guidance for interpreting numerical and narrative standards and developing permit limits.

The Water Quality Act (WQA) of 1987 (PL 100-4, February 4, 1987) further directs EPA and the States to identify waters that require controls for toxic pollutants and develop individual control strategies including permit limits to achieve control of toxics. The WQA established deadlines, for individual control strategies (February 4, 1989) and for compliance with the toxic control permit requirements (February 4, 1992). This Strategy will support the additional compliance monitoring, tracking, evaluation, and enforcement of the whole effluent toxicity controls that will be needed to meet the requirements of the WQA and EPA's policy for water quality-based permitting.

It is the goal of the Strategy to assure compliance with permit toxicity limits and conditions through compliance inspections, compliance reviews, and enforcement. Water quality-based limits may include both chemical specific and whole effluent toxicity limits. Previous enforcement guidance (e.g., Enforcement Management System for the National Pollutant Discharge Elimination System, September, 1986; National Guidance for Oversight of NPDES Programs, May, 1987; Guidance for Preparation of Quarterly and Semi-Annual Noncompliance Reports, March, 1986) has dealt with

chemical-specific water quality-based limits. This Strategy will focus on whole effluent toxicity limits. Such toxicity limits may appear in permits, administrative orders, or judicial orders.

II. Strategy Principles

This strategy is based on four principles:

- 1) Permittees are responsible for attaining, monitoring, and maintaining permit compliance and for the quality of their data.
- 2) Regulators will evaluate self-monitoring data quality to ensure program integrity.
- 3) Regulators will assess compliance through inspections, audits, discharger data reviews, and other independent monitoring or review activities.
- 4) Regulators will enforce effluent limits and compliance schedules to eliminate toxicity.

III. Primary Implementation Activities

In order to implement this Strategy fully, the following activities are being initiated:

A. Immediate development

1. The NPDES Compliance Inspection Manual was revised in May 1988 to include procedures for performing chronic toxicity tests and evaluating toxicity reduction evaluations. An inspector training module was also developed in August 1988 to support inspections for whole effluent toxicity.
2. The Permit Compliance System (the national NPDES data base) was modified to allow inclusion of toxicity limitations and compliance schedules associated with toxicity reduction evaluations. The PCS Steering Committee will review standard data elements and determine if further modifications are necessary.
3. Compliance review factors (e.g., Technical Review Criteria and significant noncompliance definitions) are being proposed to evaluate violations and appropriate response.
4. A Quality Assurance Fact Sheet has been developed (Attached) to review the quality of toxicity test results submitted by permittees.

5. The Enforcement Response Guide in the Enforcement Management System will be revised to cover the use of administrative penalties and other responses to violations of toxicity controls in permits. At least four types of permit conditions are being examined: (1) whole-effluent toxicity monitoring (sampling and analysis), (2) whole effluent toxicity-based permit limits, (3) schedules to conduct a TRE and achieve compliance with water quality-based limits, and (4) reporting requirements.

B. Begin development in Spring 1989

With the assistance of the Office of Enforcement and Compliance Monitoring (OECM), special remedies and model forms will be developed to address violations of toxicity permit limits (i.e., model consent decrees, model complaints, revised penalty policy, model litigation reports, etc.)

IV. Scope and Implementation of Strategy

A. Compliance Tracking and Review

1. Compliance Tracking

The Permits Compliance System (PCS) will be used as the primary system for tracking limits and monitoring compliance with the conditions in NPDES permits. Many new codes for toxicity testing have already been entered into PCS. During FY 89, headquarters will provide additional guidance to Regions and States on PCS coding to update existing documentation. The Water Enforcement Data Base (WENDB) requirements as described in the PCS Policy Statement already require States and Regions to begin incorporating toxicity limits and monitoring information into PCS.

In addition to guidance on the use of PCS, Headquarters has prepared guidance in the form of Basic Permitting Principles for Regions and States that will provide greater uniformity nationally on approaches to toxicity permitting. One of the major problems in the tracking and enforcement of toxicity limits is that they differ greatly from State-to-State and Region-to-Region. The Permits Division and Enforcement Division in cooperation with the PCS Steering Committee will establish standard codes for permit limits and procedures for reporting toxicity results based on this guidance.

Whole effluent toxicity self-monitoring data should undergo an appropriate quality review. (See attached checklist for suggested toxicity review factors.) All violations of permit limits for toxics control should be reviewed by a professional qualified to assess the noncompliance. Regions and States should designate appropriate staff.

2. Compliance Review

Any violation of a whole effluent toxicity limit is of concern to the regulatory agency and should receive an immediate professional review. In terms of the Enforcement Management System (EMS), any whole effluent violation will have a violation review action criterion (VRAC) of 1.0. However, the appropriate initial enforcement response may be to require additional monitoring and then rapidly escalate the response to formal enforcement if the noncompliance persists. Where whole effluent toxicity is based on a pass-fail permit limitation, any failure should be immediately targeted for compliance inspection. In some instances, assessment of the compliance status will be required through issuance of Section 308 letters and 309(a) orders to require further toxicity testing.

Monitoring data which is submitted to fulfill a toxicity monitoring requirement in permits that do not contain an independently enforceable whole-effluent toxicity limitation should also receive immediate professional review.

The burden for testing and biomonitoring is on the permittee; however, in some instances, Regions and States may choose to respond to violations through sampling or performance audit inspections. When an inspection conducted in response to a violation identifies noncompliance, the Region or State should initiate a formal enforcement action with a compliance schedule, unless remedial action is already required in the permit.

B. Inspections

EPA/State compliance inspections of all major permittees on an annual basis will be maintained. For all facilities with water quality-based toxic limits, such inspections should include an appropriate toxic component (numerical and/or whole effluent review). Overall the NPDES inspection and data quality activities for toxics control should receive greater emphasis than in the present inspection strategy.

1. Regional/State Capability

The EPA's "Policy for the Development of Water Quality-based Permit Limits for Toxic Pollutants" (March 9, 1984 Federal Register) states that EPA Regional Administrators will assure that each Region has the full capability to conduct water quality assessments using both biological and chemical methods and provide technical assistance to the States. Such capability should also be maintained for compliance biomonitoring inspections and toxics sampling inspections. This capability should include both inspection and laboratory capability.

2. Use of Nonsampling Inspections

Nonsampling inspections as either compliance evaluations (CEIs) or performance audits (PAIs) can be used to assess permittee self-monitoring data involving whole effluent toxicity limits, TREs, and for prioritization of sampling inspections.* As resources permit, PAIs should be used to verify biomonitoring capabilities of permittees and contractors that provide toxicity testing self-monitoring data.

3. Quality Assurance

All States are encouraged to develop the capability for acute and chronic toxicity tests with at least one fish and one invertebrate species for freshwater and saltwater if appropriate. NPDES States should develop the full capability to assess compliance with the permit conditions they establish.

EPA and NPDES States will assess permittee data quality and require that permittees develop quality assurance plans. Quality assurance plans must be available for examination. The plan should include methods and procedures for toxicity testing and chemical analysis; collection, culture, maintenance, and disease control procedures for test organisms; and quality assurance practices. The

* Due to resource considerations, it is expected that sampling inspections will be limited to Regional/State priorities in enforcement and permitting. Routine use of CEIs and PAIs should provide the required coverage.

permittee should also have available quality control charts, calibration records, raw test data, and culture records.

In conjunction with the QA plans, EPA will evaluate permittee laboratory performance on EPA and/or State approved methods. This evaluation is an essential part of the laboratory audit process. EPA will rely on inspections and other quality assurance measures to maintain data quality. However, States may prefer to implement a laboratory certification program consistent with their regulatory authorities. Predetermined limits of data acceptability will need to be established for each test condition (acute/chronic), species-by-species.

C. Toxicity Reduction Evaluations (TREs)

TREs are systematic investigations required of permittees which combine whole effluent and/or chemical specific testing for toxicity identification and characterization in a planned sequence to expeditiously locate the source(s) of toxicity and evaluate the effectiveness of pollution control actions and/or implant modifications toward attaining compliance with a permit limit. The requirement for a TRE is usually based on a finding of whole effluent toxicity as defined in the permit. A plan with an implementation schedule is then developed to achieve compliance. Investigative approaches include causative agent identification and toxicity treatability.

1. Requiring TRE Plans

TRE's can be triggered: 1) whenever there is a violation of a toxicity limit that prompts enforcement action or 2) from a permit condition that calls for a toxicity elimination plan within a specified time whenever toxicity is found. The enforcement action such as a 309(a) administrative order or State equivalent, or judicial action then directs the permittee to take prescribed steps according to a compliance schedule to eliminate the toxicity. This schedule should be incorporated into the permit, an administrative order, or judicial order and compliance with the schedule should be tracked through PCS.

2. Compliance Determination Followup

Compliance status must be assessed following the accomplishment of a TRE plan using the most efficient and effective methods available. These methods include site visits, self-monitoring, and inspections.

Careful attention to quality assurance will assist in minimizing the regulatory burden. The method of compliance assessment should be determined on a case-by-case basis.

D. Enforcing Toxic Control Permit Conditions

Enforcement of toxic controls in permits depends upon a clear requirement and the process to resolve the noncompliance. In addition to directly enforceable whole effluent limits (acute and chronic, including absolute pass-fail limits), permits have contained several other types of toxic control conditions: 1) "free from" provisions, 2) schedules to initiate corrective actions (such as TREs) when toxicity is present, and/or 3) schedules to achieve compliance where a limit is not currently attained. Additional requirements or schedules may be developed through 308 letters, but the specific milestones should be incorporated into the permit, administrative order or State equivalent mechanism, or judicial order to ensure they are enforceable.

1. The Quarterly Noncompliance Report (QNCR)

Violations of permit conditions are tracked and reported as follows:

a. Effluent Violations

Each exceedance of a directly enforceable whole effluent toxicity limit is of concern to the regulatory agency and, therefore, qualifies as meeting the VRAC requiring professional review (see section IV.A.2.).

These violations must be reported on the QNCR if the violation is determined through professional review to have the potential to have caused a water quality impact.

All QNCR-reportable permit effluent violations are considered significant noncompliance (SNC).

b. Schedule Violations

Compliance schedules to meet new toxic controls should be expeditious. Milestones should be established to evaluate progress routinely and minimize delays. These milestones should be tracked and any slippage of 90 days or more must be reported on the QNCR.

The following milestones are considered SNC when 90 days or more overdue: submit plan/schedule to conduct TRE, initiate TRE, submit test results, submit implementation plan/schedule (if appropriate), start construction, end construction, and attain compliance with permit.

c. Reporting/Other Violations

Violation of other toxic control requirements (including reports) will be reported using criteria that are applied to comparable NPDES permit conditions. For example, failure to submit a report within 30 days after the due date or submittal of an inaccurate or inadequate report will be reportable noncompliance (on the QNCR).

Only failure to submit toxicity limit self-monitoring reports or final TRE progress reports indicating compliance will be SNC when 30 days or more overdue.

Resolution (bringing into compliance) of all three types of permit violations (effluent, schedule, and reporting/other) will be through timely and appropriate enforcement that is consistent with EPA Oversight Guidance. Administering agencies are expected to bring violators back into compliance or take formal enforcement action against facilities that appear on the QNCR and are in SNC; otherwise, after two or more quarters the facility must be listed on the Exceptions List.

2. Approaches to Enforcement of Effluent Limitations

In the case of noncompliance with whole effluent toxicity limitations, any formal enforcement action will be tailored to the specific violation and remedial actions required. In some instances, a Toxicity Reduction Evaluation (TRE) may be appropriate. However, where directly enforceable toxicity-based limits are used, the TRE is not an acceptable enforcement response to toxicity noncompliance if it requires only additional monitoring without a requirement to determine appropriate remedial actions and ultimately compliance with the limit.

If the Regions or States use administrative enforcement for violations of toxic requirements, such actions should require compliance by a date certain, according to a set schedule, and an

administrative penalty should be considered.¹ Failure to comply with an Administrative Order schedule within 90 days indicates a schedule delay that may affect the final compliance date and a judicial referral is the normal response. In instances where toxicity has been measured in areas with potential impacts on human health (e.g., public water supplies, fish/shellfish areas, etc.), regions and states should presume in favor of judicial action and seek immediate injunctive relief (such as temporary restraining order or preliminary injunction).

In a few highly unusual cases where the permittee has implemented an exhaustive TRE plan², applied appropriate influent and effluent controls³, maintained continued compliance with all other effluent limits, compliance schedules, monitoring, and other permit requirements, but is still unable to attain or maintain compliance with the toxicity-based limits, special technical evaluation may be warranted and civil penalty relief granted. Solutions in these cases could be pursued jointly with expertise from EPA and/or the States as well as the permittee.

Some permittees may be required to perform a second TRE subsequent to implementation of remedial action. An example of the appropriate use of a subsequent TRE is for the correction of new violations of whole effluent limitations following a period of

¹Federal Administrative penalty orders must be linked to violations of underlying permit requirements and schedules.

²See Methods for Aquatic Toxicity Identification Evaluations, Phase I, Toxicity Characterization Procedures, EPA-600/3-88/035, Table 1. An exhaustive TRE plan covers three areas: causative agent identification/toxicity treatability; influent/effluent control; and attainment of continued compliance. A listing of EPA protocols for TREs can be found in Section V (pages 11 and 12).

³For industrial permittees, the facility must be well-operated to achieve all water quality-based, chemical specific, or BAT limits, exhibit proper O & M and effective BMPs, and control toxics through appropriate chemical substitution and treatment. For POTW permittees, the facility must be well-operated to achieve all water quality-based, chemical specific, or secondary limits as appropriate, adequately implement its approved pretreatment program, develop local limits to control toxicity, and implement additional treatment.

sustained compliance (6 months or greater in duration) indicating a different problem from that addressed in the initial TRE.

3. Enforcement of Compliance Schedule and Reporting Requirements

In a number of instances, the primary requirements in the permits to address toxicity will be schedules for adoption and implementation of biomonitoring plans, or submission of reports verifying TREs or other similar reporting requirements. Regions and States should consider any failure (1) to conduct self-monitoring according to EPA and State requirements, (2) to meet TRE schedules within 90 days, or (3) to submit reports within 30 days of the specified deadline as SNC. Such violations should receive equivalent enforcement follow-up as outlined above.

4. Use of Administrative Orders With Penalties

In addition to the formal enforcement actions to require remedial actions, Regions and States should presume that penalty AO's or State equivalents can be issued for underlying permit violations in which a formal enforcement action is appropriate. Headquarters will also provide Regions and States with guidance and examples as to how the current CWA penalty policy can be adjusted.

5. Enforcement Models and Special Remedies

OWEP and OECM will develop standard pleadings and language for remedial activities and compliance milestones to assist Regions and States in addressing violations of toxicity or water quality-based permit limits. Products will include model litigation reports, model complaints and consent decrees, and revised penalty policy or penalty algorithm and should be completed in early FY 1989.

V. Summary of Principal Activities and Products

A. Compliance Tracking and Review guidance

1. PCS Coding Guidance - May, 1987; revision 2nd Quarter 1989
2. Review Criteria for Self-monitoring Data (draft attached)

B. Inspections and Quality Assurance

1. Revised NPDES Compliance Inspection Manual - May 1988.
2. Quality Assurance Guidance - 3rd Quarter FY 1989.
3. Biomonitoring Inspection Training Module - August 1988.
4. Additions of a reference toxicant to DMRQA program - (to be determined)

C. Toxics Enforcement

1. Administrative and Civil Penalty Guidance - 4th Quarter FY 1989
2. Model Pleadings and Complaints - 2nd Quarter 1989
3. EMS Revision - 2nd Quarter FY 1989

D. Permitting Consistency

1. Basic Permitting Principles - 2nd Quarter FY 1989

E. Toxicity Reduction Evaluations

1. Generalized Methology for Conducting Industrial Toxicity Reduction Evaluations - 2nd Quarter FY 1989
2. Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants - 2nd Quarter FY 1989

3. Methods for Aquatic Toxicity Indentification Evaluations

- a. Phase I. Toxicity Characterization Procedures, EPA-600/3-88/034-September 1988
- b. Phase II. Toxicity Identification Procedures, EPA-600/3-88/035-2nd Quarter 1989
- c. Phase III. Toxicity Confirmation Procedures-
EPA-600/3-88/036 - 2nd Quarter
FY 1989

QUALITY CONTROL FACT SHEET FOR SELF-BIOMONITORING
ACUTE/CHRONIC TOXICITY TEST DATA

Permit No. _____

Facility Name _____

Facility Location _____

Laboratory/Investigator _____

Permit Requirements:

Sampling Location _____ Type of Sample _____

Limit _____ Test Duration _____

Type of Test _____ Test Organism Age _____

Test Results:

LC50/EC50/NOEL _____ 95% Confidence Interval _____

Quality Control Summary:

Date of Sample: _____ Dates of Test: _____

Control Mortality: _____% Control Mean Dry Weight _____

Temperature maintained within $\pm 2^{\circ}\text{C}$ of test temperature? Yes _____ No _____

Dissolved oxygen levels always greater than 40% saturation?

Yes _____ No _____

Loading factor for all exposure chambers less than or equal to
maximum allowed for the test type and temperature? Yes _____ No _____Do the test results indicate a direct relationship between effluent
concentration and response of the test organism (i.e., more deaths
occur at the highest effluent concentrations)? Yes _____ No _____

Sample Permit Conditions

Sample permit conditions have been developed to serve as an example to permit writers of the implementation of the basic permitting principles. Unlike boiler plate language that is incorporated directly into permits, this example language should be modified for individual permits based upon the permitting scenario chosen, the permit writers knowledge of the permittee, and water quality standards.

The first permit condition presented is an example of whole-effluent toxicity limitations. These example limitations appear in Part I of the permit. The effective date of the limits must be stated as immediate in the case of scenario 1 (immediate final whole-effluent limits) or at a specified future date in the case of scenario 2 (delayed final whole-effluent limits).

The second permit condition (Part I.B) is an example of reporting requirements to increase monitoring in the event of an effluent violation and leading either to an enforcement action, a TRE, or return to normal monitoring. This monitoring is not aimed at verifying the original violation, but determining further action on the part of the permitting agency.

The third permit condition presented (Part III.A) is an example of a Toxicity Reduction Evaluation preliminary schedule. This schedule may be set in a permit in those instances where toxicity is known to be present, or by re-opening the permit or issuing an enforcement order (Section 308 for initial toxicity source identification/treatability studies, Section 309 for a complete TRE) where toxicity is found subsequent to permit issuance. Once again, this language should be revised based on case-specific considerations.

The fourth permit condition (Part III.B) is an example of monitoring and analysis requirements for whole-effluent toxicity testing. This language should specify the test species and reference specific test protocols to be used.

MODEL PERMIT LANGUAGE
FOR EFFLUENT TOXICITY LIMITS

Part I.A. Final Effluent Limitations and Monitoring Requirements

During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall(s):_____.

| <u>Effluent Characteristic</u> | | <u>Discharge Limitation</u> | | | | <u>Monitoring Requirement</u> | |
|--------------------------------|-----------|-----------------------------|--------|---------|--------|-------------------------------|----------------|
| Reporting code/units | Parameter | Concentration | | Loading | | Measurement Frequency | Sample Type |
| | | Daily | 30-day | Daily | 30-day | | |
| 61426/TU _C | Toxicity | 1.2 | 5.9 | --- | --- | x/month | composite |

Part I.B. Reporting Requirements

1. Toxicity Limitations

Where any one monitoring event shows a violation of the limits in Part I.A of this permit, the permittee shall be considered in violation of this permit and shall increase the frequency of toxicity testing to once per week and submit the data within x days to the permitting authority. The permitting authority will determine what action will be required to return the permittee to compliance; whether the permittee must implement the requirements of Part III.A of this permit, or if the permittee has returned to compliance and may return to the monitoring requirement in Part I.A.

The permittee shall use the testing and data assessment procedures described in Part III.B of this permit.

Part III.A. Special Conditions: Toxicity Reduction Evaluation

The Discharger shall demonstrate that effluent toxicity-based permit limitations described in Part I.A. of this permit are being attained and maintained through the application of all reasonable treatment and/or source control measures. Upon identifying noncompliance with those limits following the conditions of Part I.C.1., the Discharger shall initiate corrective actions according to the following schedule:

| <u>Task</u> | <u>Deadline</u> |
|---|---|
| 1. Take all reasonable measures necessary to immediately reduce toxicity | within 24 hours |
| 2. Where source of toxicity is known, submit a plan and schedule to attain continued compliance with the effluent toxicity-based permit limitations in Part I.A., if immediate compliance is not attained | within 30 days |
| 3. Where source is unknown and toxicity cannot be immediately controlled through operational changes, submit a TRE study plan detailing the toxicity reduction procedures to be employed. EPA's Toxicity Reduction Procedures, Phases 1, 2, and 3 (EPA-600/3-88/034, 035, and 036) and TRE protocol for POTWs (EPA-600/_____) shall be the basis for this plan and schedule | within 45 days |
| 4. Initiate TRE plan | within 45 days |
| 5. Comply with approved TRE schedule | immediately upon approval |
| 6. Submit results of the TRE; include summary of findings, corrective actions required, and data generated | per approved schedule |
| 7. Implement TRE controls as described in the final report | on due date of final report per approved schedule |
| 8. Complete TRE implementation to meet permit limits and conditions | per approved schedule, but in no case later than ____ months from initial noncompliance |

Part III.B. Special Conditions: Compliance Biomonitoring Requirements for Part I Toxicity-Based Permit Limitations

The permittee shall perform toxicity tests, as described below, on the discharge from outfall(s) _____.

1. The permittee shall initiate the following series of tests within _____ days of the effective date of this Part to evaluate wastewater toxicity. Such testing will determine if an appropriately dilute effluent sample affects the survival, reproduction, or growth of the test organisms. All tests will be conducted on 24-hour composite samples of _____% final effluent. A minimum of four replicates will be used in each of the following tests. The Student's t test shall be used to determine whether differences in control and effluent data are significant.
 - a. The permittee shall conduct a 7-day Ceriodaphnia survival and reproduction test on samples of _____% final effluent (diluted by an approved control water). Toxicity will be demonstrated if there is a statistically significant difference at the 95% confidence level in survival or growth between Ceriodaphnia exposed to the control water and _____% final effluent. All test solutions shall be renewed daily. If, in any control, more than 20% of the test organisms die, that test (control and effluent) shall be repeated within one week.
 - b. The permittee shall conduct a 7-day fathead minnow larval survival and growth test on samples of _____% final effluent (diluted by an approved control water). Toxicity will be demonstrated if there is a statistically significant difference at the 95% confidence level in survival or growth between Pimephales promelas exposed to the control water and _____% final effluent. All test solutions shall be renewed daily. If, in any control, more than 20% of the test organisms die, that test (control and effluent) shall be repeated.
2. The toxicity tests specified in Paragraph (1) above shall be conducted once every month for a period of one year following initiation of the tests, and once every 3 months thereafter for the duration of the permit. Results shall be reported according to EPA/600/4-85/014, Section 10, Report Preparation, and shall be submitted to EPA with the monthly discharge monitoring report.
3. All test organisms, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Section 13: Ceriodaphnia Survival and Reproduction Test Method 1002.0; Section 11: Fathead Minnow (Pimephales promelas) Larval Survival and Growth Test Method 1000.0; EPA/600/4-85/014. The selection of an appropriate control water for the toxicity tests shall be submitted to EPA for review and approval prior to use.

Permitting/Enforcement Scenarios

To illustrate the different approaches which can be taken to whole-effluent toxicity control, three basic permitting and enforcement scenarios have been developed. These scenarios are based largely on the basic permitting principles and our current statutory authorities for taking administrative actions. The scenarios do not specifically mention our authority to seek judicial resolution to violations of NPDES permits, which is an enforcement decision made on a case-specific basis rather than as a standard operating procedure. The scenarios also limit the choice of action to the most likely options in several places. For instance, it would be possible to require toxicity source identification/treatability studies by re-opening the permit; however, issuing a Section 308 letter would be a much better use of limited resources.

Scenarios 1 and 2 are recommended for permittees with potential or known toxicity. Scenario 3 is only appropriate to establish the presence or absence of toxicity for permittees with no known or suspected toxicity.

The scenarios make certain assumptions at the time of permit issuance, and track through various action paths based on knowledge of the toxicity of the effluent, the lapse of time to complete a given stage of the diagram, and the preference of the permitting authority. The diagrams reinforce the following facts which are common to the control of both whole-effluent toxicity and chemical-specific pollutants:

The permit is the basic enforceable document, and as such would establish the monitoring requirements and limits for whole-effluent toxicity. Permits could also be the mechanism used to require a TRE and corrective actions.

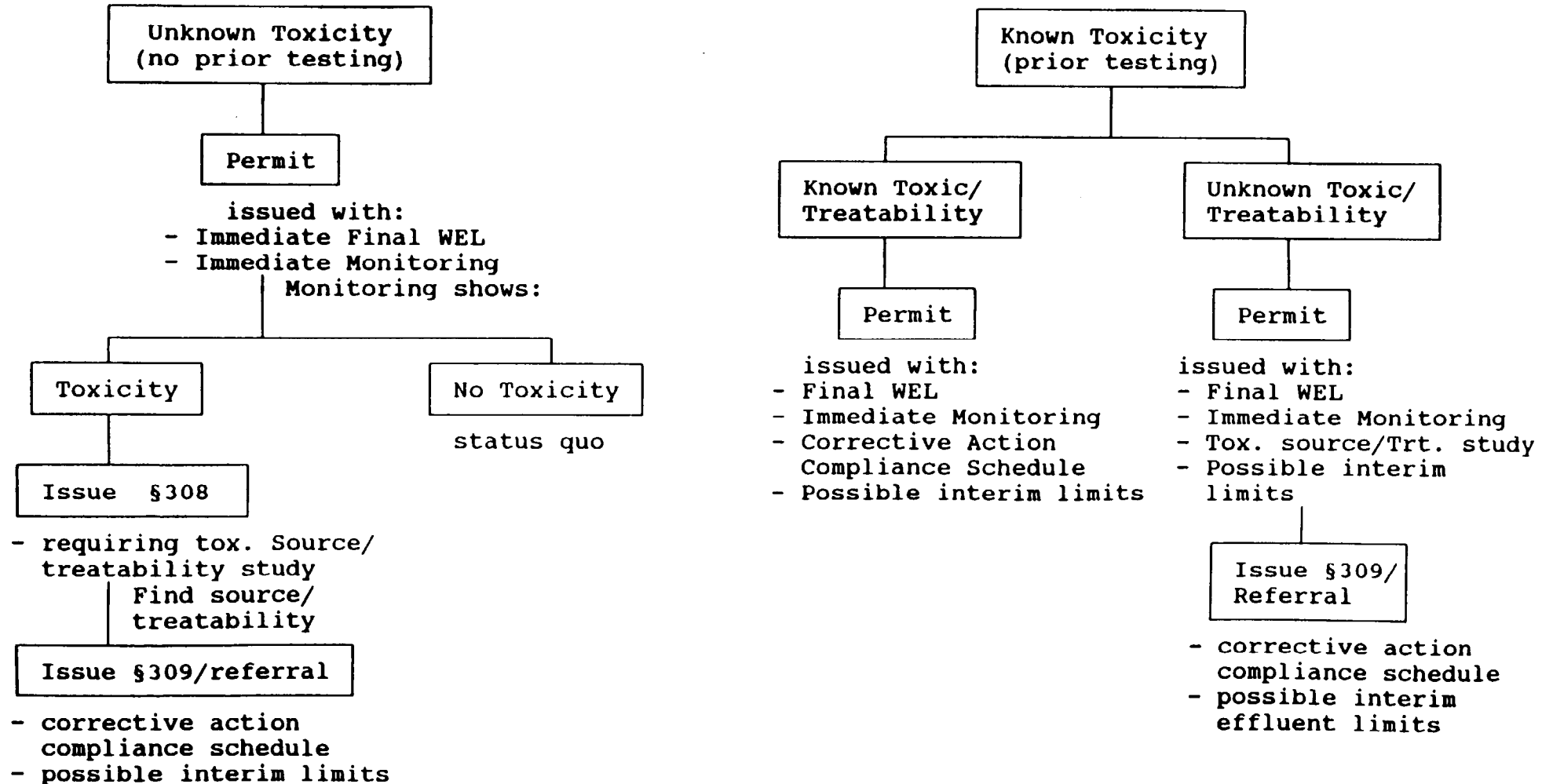
Section 308 letters may be used in lieu of re-opening the permit to require the first phases of a TRE (toxicity source and treatability studies); however, the permit or a Section 309 order must be used to require any corrective action compliance schedules.

Section 309 orders may be used to require a TRE and corrective actions, but only in response to a permit violation.

Only permits may require a corrective action compliance schedule in advance of the effective date of a whole-effluent limit.

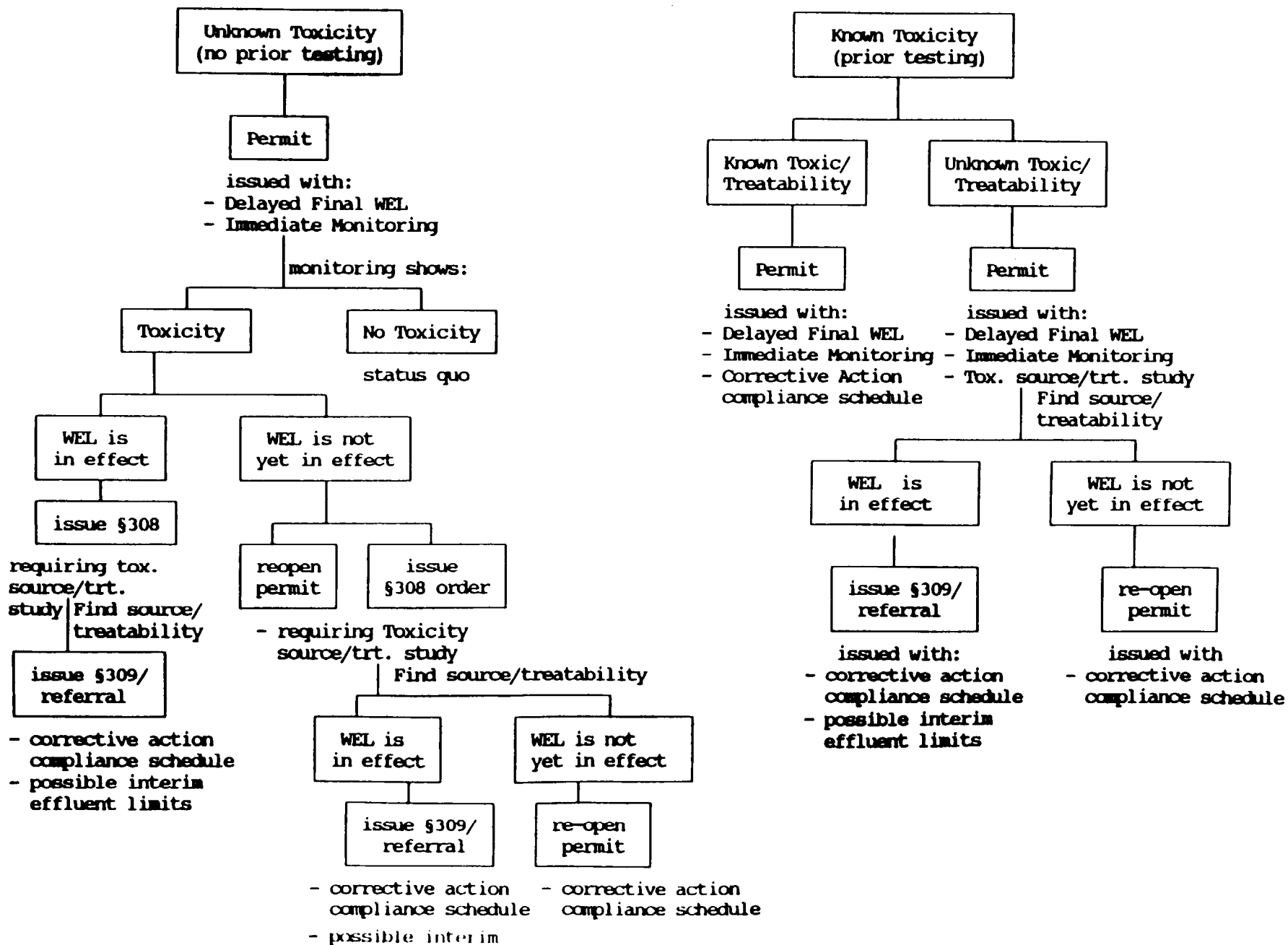
SAMPLE PERMIT/ENFORCEMENT SCENARIOS
IMMEDIATE FINAL WHOLE-EFFLUENT TOXICITY LIMITS

Assumption: Final Whole-Effluent Limit (WEL) has been calculated using TSD or similar methods. Permittees have conducted different levels of toxicity testing. Immediate WEL are planned. Permit is about to be issued.



SAMPLE PERMIT/ENFORCEMENT SCENARIOS
DELAYED FINAL WHOLE-EFFLUENT TOXICITY LIMITS

Assumption: Final Whole-effluent Limit (WEL) has been calculated using TSD or similar methods. Permittees have conducted different levels of toxicity testing. Delayed (e.g., effective at a specified future date) WEL are planned. Permit is about to be issued.



SAMPLE PERMIT/ENFORCEMENT SCENARIOS
WHOLE-EFFLUENT MONITORING WITH REOPENER

ASSUMPTION: Final Whole-effluent Limit (WEL) has been calculated using TSD or similar methods. Permittees have not conducted prior toxicity testing. Potential or existing whole-effluent toxicity is improbable; monitoring only is planned. Permit is about to be issued.

