New York State Department of Environmental Conservation
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Commissioner

MEMORANDUM

*****NOTICE*****

This document has been developed to provide Department staff with guidance on how to ensure compliance with statutory and regulatory requirements, including case law interpretations, and to provide consistent treatment of similar situations. This document may also be used by the public to gain technical guidance and insight regarding how the department staff may analyze an issue and factors in their consideration of particular facts and circumstances. This guidance document is not a fixed rule under the State Administrative Procedure Act section 102(2)(a)(I). Furthermore, nothing set forth herein prevents staff from varying from this guidance as the specific facts and circumstances may dictate, provided staff's actions comply with applicable statutory and regulatory requirements. This document does not create any enforceable rights for the benefit of any party.

TO: Regional Water Engineers, Bureau Directors, Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series 1.3.9 - Implementation of the NYSDEC Antidegradation Policy - Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985)

Originator - Richard Draper

DATE: FEB 26 1998

Purpose: To provide supplementary guidance associated with the implementation of the NYSDEC 1985 Antidegradation Policy. This guidance concerns new or increased discharges of Bioaccumulative Chemicals of Concern (BCCs) to waters of the Great Lakes System. BCCs are those substances that accumulate in aquatic organisms by a bioaccumulation factor (BAF) greater than 1000. The BAF is the ratio of a substance's concentration in tissue of an aquatic organism to its concentration in water. The substances that have been identified as BCCs are include in Table 1.

Discussion: 40CFR section 132.4 requires the state to adopt an Antidegradation policy consistent with (as protective as) Appendix E to Part 132. Appendix E provides details with respect to the implementation of an Antidegradation Policy. In consideration of the requirements of section 132.4 and the additional details provided in Appendix E, the Division has developed this supplement to the current Policy. The current Policy remains in effect. This supplement is applicable to all new or increased discharges of a BCC to any waters of the Great Lakes System. This guidance is intended to assure that any new or increased discharge of BCCs to the waters of the Great Lakes System has undergone a complete evaluation of alternatives that would reduce or avoid the discharge prior to the decision to permit. In addition, the proposed discharge should not be permitted without a demonstration that it is associated with important social or economic development that benefits the local area. In addition to the application of this guidance, the discharge of any substance will be subject to any and all of the Department's Policies and Procedures that address the protection of water quality.

This policy does not supersede any regulations related to the production, manufacture or use of any substance. For this reason, we expect that there will be very few instances where a new or increased discharge of a BCC will be requested especially for those substances currently restricted. The compounds listed in Table 1 that currently have a statewide prohibition on distribution, purchase, sale possession or use (6NYCRR 362.2(c)) include:

> Chlordane, 4,4'-DDD (p,p'-DDD); 4,4'-TDE (p,p'TDE); 4,4'-DDE (p,p'-DDE); 4,4'-DDT (p,p'-DDT); Dieldrin; Hexachlorocyclohexane (BHC); alpha-Hexachlorocyclohexane (alpha-BHC); beta-Hexachlorocyclohexane (beta-BHC); delta-Hexachlorocyclohexane (delta-BHC); Mirex (dechlorane); and Toxaphene.

Any applicants for a SPDES permit, or modification, identified as having a BCC present in the discharge, should be subject to any and all state and federal regulations related to the manufacture and use of that substance.

Antidegradation Standard

> The protection of waters from the lowering of water quality is outlined in the NYSDEC Organization and Delegation Memorandum No. 85-40 Water Quality Antidegradation Policy (AD Policy) dated September 9, 1985 (Attachment A). The AD Policy protects the existing quality of waters in New York State unless it is demonstrated that allowing the lowering of water quality is necessary to accommodate significant economic or social development in the affected area and the water quality will be adequate to meet the existing use after allowing the lowering of water quality.
>
> Implementation of the NYSDEC Antidegradation Policy for all waters in New York State is based upon the AD Policy. For waters in the Great Lakes System of New York,

implementation with regard to BCCs should be based upon the AD Policy and this TOGS (1.3.9).

Antidegradation Implementation Procedures

The following guidance provides the basis by which the Division of Water should make a decision to allow a new or increased discharge of a BCC to the waters of the Great Lakes System.

For any new or increased discharge of any BCC (see Table 1), the applicant should provide the Department information related to the measures taken to minimize the proposed discharge of a BCC and the social/economic benefits associated with the actions that would lead to the new or increased discharge.

Guidance: The guidance for implementation of this policy consists of three parts:

1. Determination of applicability;
2. Antidegradation Demonstration;
3. Antidegradation review.

1. **Determination of applicability** - It is the responsibility of the applicant to provide the information needed to determine the characteristics and location of the discharge. Based on this information the NYSDEC permit writer/reviewer will make a determination of applicability.

1.a. **Geographic Scope**: This guidance applies to new or increased discharges of BCCs to waters of the Great Lakes System in New York State. The Great Lakes System means all the streams, rivers, lakes and other bodies of water within the drainage basin of the St. Lawrence River to the Canadian border.

1.b. **New Discharge**: For proposed new discharges, the applicant should determine if the proposed discharge includes a BCC. Table 1 lists the 22 substances that are currently identified as BCCs. Guidance on how to determine if a substance is present in a discharge is identified **(TOGS 1.3.3 Section V. for POTWs; TOGS 1.2.1 Section B. for Industrial Discharges).** If the permittee determines that the proposed discharge has the "reasonable potential" to include a BCC, an Antidegradation Demonstration should be required by the Department prior to the approval of a SPDES permit.

1.b.1. **Exemptions**: The following changes in the discharge of a BCC should be exempted from the requirement for an Antidegradation demonstration:

- short-term (generally, weeks or months), temporary discharges. Examples include but are not limited to stormwater, combined sewer overflows, discharges associated with construction activities and short-term releases associated with dredging.

- bypasses that are not prohibited by 40 CFR 122.41.

- a discharge, response or other remedial activity, including dredging, that is necessary to alleviate an imminent and substantial danger to the public health or the environment, including but not limited to those approved pursuant to CERCLA, RCRA, New York's Inactive Hazardous Waste Site Program or any other Federal or State remedial program. An imminent and substantial danger to the public health and environment should include, but not be limited to, a significant threat to the environment as defined in 6NYCRR 375.

- service area expansion through incorporation of previously sewered areas, and/or elimination of existing direct industrial discharges through indirect discharge to a municipal POTW within the same watershed. Provided the aggregate loading of BCCs to the water body is the same or less, new or increased discharges from POTWs should be exempt when existing releases of BCCs to a water body will be incorporated into service area expansions or indirect industrial discharges.

- long term dredging that does not require a SPDES permit, and is not the result of dredge spoil being moved to another watershed for management purposes.

The exemptions identified above are considered to be temporary in nature and associated with an overall environmental improvement. Activities requiring a SPDES permit, that are exempt from an Antidegradation demonstration, should be subject to a water quality evaluation in accordance with standard procedures. Discharges associated with non-remedial dredging activities should be evaluated on a case by case basis.

1.c. **Existing Discharges**: If a proposed action at a facility will result in:

- any change in production/treatment capacity which has a reasonable potential to result in a new or increased discharge of a BCC ; or

- processes beyond what is permitted at the existing facility, which are not short term or temporary:

permitees are required to notify the Department in accordance with 6 NYCRR 754.4 (g & h); SPDES general conditions 1c and 12.1; and 40 CFR 122.42. The permittee should determine if the action/activity has the reasonable potential to increase the amount of a BCC in the discharge **(TOGS 1.3.3 Section V. for POTWs; TOGS 1.2.1 Section B. for Industrial Discharges)**. If the

action/activity has the "reasonable potential" to increase the discharge of any BCC, an Antidegradation demonstration should be required.

1.c.1. **Exemptions**: Increased discharges that are covered by the current permit within the existing treatment capacity and processes, should be exempted from the requirement for an Antidegradation demonstration these include:

- normal operating variability (e.g. intermittent increases during wet-weather conditions, diurnal fluctuations associated with production);

- changes in intake pollutants;

- increasing the production hours at a facility, or increasing the rate of production;

- new effluent limits that are not the result of changes in pollutant loading but are based upon:
  - improved monitoring data (e.g. lower detection limits);
  - new water quality standards or values; or
  - new or modified effluent limitation guidelines, pretreatment standards, or control requirements for POTWs.

1.d. Where the water quality necessary to maintain the current use is not being attained because of a specific BCC, no additional loading of the pollutant of concern should be allowed that are not consistent with TOGS 1.3.1..

Consideration should be given to the original source of the BCC of concern. Discharges that the Department has determined to be associated with a process using, creating, or otherwise introducing the substance that has not been previously found in an existing discharge, should not be permitted to result in additional loadings to the water body.

New discharges will not be permitted to waters designated "no new discharge or no new discharge of a specific substance" by the application of a discharge restriction under 6NYCRR 701.24.

Discharges that should not be categorically prohibited include:

- a discharge, response or other remedial activity that is necessary to alleviate an imminent and substantial danger to the public health or the environment including but not limited to those approved pursuant to CERCLA, RCRA New York's Inactive Hazardous Waste Site Program or any other Federal or State remedial program. An imminent and substantial danger to the public health and environment should include, but not be limited to, a significant threat to the environment as defined in 6NYCRR 375.

- discharges of a substance that the Department has determined is ubiquitous in the environment and not subject to effective reduction strategies, and for which the controllable sources are a de-minimus portion of the Waste Load Allocation (WLA) established in a TMDL. Examples include contaminants in intake waters (from the same water body), and precipitation. Pollutants in intake waters are addressed in the permit writing and TMDL TOGS (1.3.1, 1.3.3 and 1.2.1).

- the discharge of pollutants found in precipitation that is discharged either as stormwater or otherwise, should not be categorically prohibited. However, the discharge of stormwater is subject to control as identified in the permit writing TOGS (1.3.3 & 1.2.1).

2. **Antidegradation Demonstration** - The applicant should provide the following information as part of an Antidegradation Demonstration Package:

   1. a Pollution Prevention Alternatives Analysis.

   2. an Alternative or Enhanced Treatment Analysis.

   3. an Analysis of Important Social or Economic Development.

The information to be provided in this demonstration is also identified in the Antidegradation Supplement to **INDUSTRIAL APPLICATION FORM NY-2C** (Supplement A) and **MUNICIPAL APPLICATION FORM NY-2A** (Supplement A).

2.1. **Pollution Prevention Alternatives**: Pollution prevention activities should be considered and identified in determining whether or not reasonably available alternatives exist that would eliminate or reduce the anticipated discharge of BCCs. Those alternatives that eliminate or reduce the discharge of BCCs, and are cost-effective and reasonably available, should generally be implemented. Examples of pollution prevention activities that should be considered include:

- Substitution of non-bioaccumulative or non-toxic chemicals for BCCs. The applicant should determine if the source of and/or increase in a BCC can be eliminated in favor of a less environmentally problematic substance, especially one that is not a BCC.

- Application of water conservation methods. The applicant should determine whether or not reductions in the overall volume of waste water are possible and would reduce pollutant loadings.

- Waste source reduction within process streams. The applicant should evaluate all waste streams involved in the process associated with the discharge of the BCC.

Opportunities to control more carefully the use of raw materials and reduce waste should be identified and implemented where feasible.

- Recycle or reuse of waste byproducts. The applicant should identify ways in which recycling and reuse of internal waste streams can be employed to reduce the loadings of pollutants to the environment.

- Manufacturing process operational changes. The applicant should identify different means of achieving the desired end that produce smaller quantities of BCCs in the discharge. All of the processes that are related to the new/increased discharge of the BCC should be examined and reasonably available alternatives that would reduce or eliminate the discharge of BCCs should be identified.

- Industry specific BMPs/PMPs. Examples include medical/dental, photo processing, and printing.

- Alternate treatment or disposal programs. Local/regional programs which reduce the potential for release of household hazardous wastes to POTWs.

- Regional waste source reduction. Activities within specific Industrial/Commercial categories, for example watershed regions providing alternate source reduction, reuse, recycling or treatment or disposal techniques which reduce the potential for release of hazardous waste to POTWs or Industrial discharges.

2.2. **Alternative or Enhanced Treatment to Reduce the Discharge of BCCs**: The applicant should evaluate and identify treatment alternatives that would or have minimized the amount of the BCC to be discharged. Treatment alternatives and the resulting effluent levels should be reviewed in accordance with TOGS 1.2.1 and 1.3.3.. Those alternatives that are cost-effective and reasonably available in reducing the amount of the BCC should generally be implemented. This analysis should be undertaken after the pollution prevention analysis is completed and should focus on removing the remaining incremental increase in pollutant loadings after cost-effective pollution prevention measures are taken.

The objective of the alternative or enhanced treatment analysis is to ensure that the discharge of pollutants is reduced to the greatest extent practicable. The analysis proceeds by identifying (if any) the least costly options for additional treatment that would eliminate or reduce the discharge of BCCs. The costs of the different treatment options should be determined and compared to baseline treatment costs. Baseline treatment costs are the costs of the treatment needed to achieve all applicable standards, including Federal effluent guidelines, water quality-based effluent limits and all other applicable Federal and State or Tribal requirements. Where treatment options are identified that are comparable in cost to baseline treatment costs and allow the proposed activity to occur without leading to a discharge of BCCs, those treatment options should generally be implemented.

2.3. **Analysis of Important Social or Economic Development**: The applicant should identify any important social or economic development and the benefits to the local area associated with the activity that causes the new or increased discharge of the BCC. Factors that could be addressed include, but are not limited to: employment, increases in production, avoidance of employment reductions, increases in efficiency, industrial, commercial or residential growth, environmental or public health protection.

The applicant should show that the discharge proposed will support social and/or economic benefits. This part of the demonstration should occur only after pollution prevention or alternative treatment options are evaluated and the new or increased discharge of BCC remains. The applicant should identify:

- The geographic area in which the economic benefits occur.

- The baseline economic condition of the area. Factors that may be useful include unemployment rates, percentage of the population living below poverty levels, percentage of the population that are elderly and average household income relative to State and National averages.

- The benefits of the proposed activity corrected for any negative economic impacts of the activity. The types of benefits from the activity to be considered include an increase in the number of jobs, an increase in personal income and/or wages, reduction in unemployment rates or social service expenses, increased tax revenues and provision of necessary social services. Other measures may be relevant on a case-by-case basis, including social benefits that can be quantified or described in other than economic terms.

- Cost and economic benefit information: Examples of methodologies are identified in Chapter 5 of the USEPA Workbook Interim Economic Guidance for Water Quality Standards, dated March 1995.

- Adverse economic impacts may also result from an activity that supports social and economic development. For example, a new industrial facility may provide additional jobs in a community; however it may also make the receiving water less attractive for recreation or increase the severity of a fish consumption advisory, and cause a loss in tourism dollars, or economic opportunity due to lost recreational fishing activity. Such impacts should be considered in determining whether or not a project or activity that will result in a new or increased discharge of a BCC will also support important social and economic development.

- Whether a proposed activity will preclude another activity that may not affect water quality yet yield comparable social and economic benefits. For

example. the siting of an industrial plant may preclude water front development or building of a marina that would provide comparable social and economic development at less cost to the environment.

3. **Antidegradation Review** - The Department should review the information provided by the applicant to determine if the following criteria have been met:

- Has the applicant determined the reasonable potential for the BCC to be present in the new or increased discharge in accordance with guidance?

- Has the applicant provided an Antidegradation Demonstration Package including: a Pollution Prevention Alternatives Analysis; an Alternative or Enhanced Treatment Analysis; and an Analysis of Important Social or Economic Development?

If all three elements of the Antidegradation Demonstration package have been met at this point. after review of the package. the Division of Water should make a tentative determination to permit the new or increased discharge. The decision should be included in the draft permit and noted as such. The draft permit should then be receive public notice. announcing the proposed permit (or modification). the fact that it will result in an increased discharge of a BCC. that the proposed increase will not cause or contribute to a violation of water quality standards. that the proposed increase is associated with a social/economic benefit and the availability of the Antidegradation package for public review.

Subsequent to the review of public comments on the proposed permit (or modification) the Division of Water should determine whether or not the new or increased discharge is necessary and supports important social or economic development in the area. Any net environmental benefit resulting from the activity will be considered. The permit should be approved if the Division of Water determines that the discharge is necessary and supports important social or economic development in the area. or will result in a net environmental benefit. If the Division of Water determines that the discharge is <u>not</u> necessary or <u>does not</u> support important social or economic development or environmental benefit in the area. the new/increased discharge of the BCC should <u>not</u> be approved.

N.G. Kaul
Director. Division of Water

TABLE 1
BIOACCUMULATIVE CHEMICALS OF CONCERN (BCCs)

NAME	CAS NUMBER
Chlordane (also CAS# 12789-03-6)	57-74-9
4,4'-DDD; p,p'-DDD; 4,4'-TDE; p,p'TDE	72-54-8
4,4'-DDE; p,p'-DDE	72-55-9
4,4'-DDT; p,p'-DDT	50-29-3
Dieldrin	60-57-1
Hexachlorobenzene	118-74-1
Hexachlorobutadiene; hexachloro-1,3-butadiene	87-68-3
Hexachlorocyclohexane; BHC	608-73-1
alpha-Hexachlorocyclohexane; alpha-BHC	319-84-6
beta-Hexachlorocyclohexane; beta-BHC	319-85-7
gamma-Hexachloroxcyclohexane; gamma-BHC; Lindane	58-89-9
delta-Hexachlorocyclohexane; delta-BHC	319-86-8
Mercury	7439-97-6
Mirex; dechlorane	2385-85-5
Octachlorostyrene	29082-74-4
Pentachlorobenzene	608-93-5
Photomirex	39801-14-4
Polychlorinated Biphenyls; PCBs	A21000-00-0
2,3,7,8-TCDD	1746-01-6
1,2,3,4-Tetrachlorobenzene	634-66-2
1,2,4,5-Tetrachlorobenzene	95-94-3
Toxaphene	8001-35-2