

*REGION V GUIDANCE FOR ANTIDEGRADATION POLICY IMPLEMENTATION
FOR HIGH QUALITY WATERS - DECEMBER 3, 1986*

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INTRODUCTION

All States must have antidegradation policy language consistent with 40 CFR 131.12 in their water quality standards, and appropriate implementation procedures. This document is intended to provide guidance to the States in formalizing their own antidegradation policy implementation procedures. It also serves as the Regional benchmark for evaluating antidegradation policy issues related to Regional reviews of NPDES permits, wasteload allocations, or other actions which could lower water quality.

The Region recommends that State procedures be developed in such a way that dischargers contribute appropriately to meeting the antidegradation requirements. It is expected that required information and demonstrations will be developed primarily by the discharger(s) requesting a lowering of water quality.

The antidegradation policy in 40 CFR 131.12 requires that uses be protected. Since uses are protected by water quality criteria, any application for less stringent effluent limitations, increased discharge loads, or new discharges, may be considered only if the quality of the receiving waters exceeds the water quality standards.

The Federal antidegradation policy further specifies that State antidegradation policy and implementation methods will, at a minimum, maintain and protect water quality "where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water". Federal policy does not limit the antidegradation policy; therefore, any action which would result in a lowering of water quality in high quality waters is potentially subject to antidegradation policy implementation. This includes, but is not limited to, the following types of point source circumstances:

1. industrial production increases,

2. new discharger or source,
3. municipal growth,
4. reallocation of abandoned load allocations,
5. modeling revisions, and
6. correction of wasteload allocation errors.

The basic principle is that the same kind of protection is to be applied to all unused assimilative capacity (the increment in water quality above that required to meet standards).

Although the following guidance focuses on the application of the antidegradation policy to NPDES permits, the state should also plan to develop procedures for assessing nonpoint source activities that lower water quality. They include, but are not limited to, the following:

- changes in agricultural activities;
- changes in silvicultural activities;
- changes in mining activities;
- urban development;
- removal of BMPs;
- discharge of dredged and fill materials (e.g., §402 and §404 permits);
- §401 certifications;
- §208, §303(c), and water quality management plan approvals;
- resource management plan approvals;
- land management (e.g., forest) plan approvals; and
- RCRA/CERCLA actions that affect water quality.

For nonpoint source activities that currently require public notification, the information contained in Section II-D below must be part of the public notification process. A discussion of the requirements with regard to

Sections 401 and 404 permits is contained in Section III-C. For the other activities that currently do not require public notification, the State should develop a process to ensure that public notification is provided for those activities that would lower water quality. This will ensure that the public is afforded the opportunity to comment on all actions that lower water quality.

Where nonpoint source activities are not currently permitted, or otherwise regulated through water quality protection plans, it may not be feasible at this time to develop antidegradation procedures for them, or to apply antidegradation policy to them.

I. ANTIDEGRADATION AND WATER QUALITY STANDARDS

Application of the antidegradation policy assumes that the water quality standards have been appropriately set for waterbodies where water quality will be lowered. Where the standards themselves are questionable, it will be necessary to review, and if appropriate revise, the standards.

II. APPLICATION OF ANTIDEGRADATION POLICY TO NPDES PERMITS

Implementation of antidegradation policy for NPDES permits is a four step process. The first step is to determine whether the proposed action is eligible for consideration, as described in Section A. The second step is to determine if the eligible proposed action would cause a significant lowering of water quality (Section B). If the predicted change in water quality is insignificant, then no further "tests" are required. Where the proposed action would significantly lower water quality, then the third step involves a demonstration that lowering water quality is necessary to accommodate important economic and social development in the area (Section C). Section D addresses the public participation and intergovernmental cooperation elements of the antidegradation policy. Where the documentation for a permit issuance/reissuance/modification does not

provide adequate evidence of State antidegradation policy implementation, the Region may object to the proposed permit.

It should be noted that some actions affecting NPDES permits (i.e., relaxation of existing permit limitations) may be subject to the antibacksliding rule. Antibacksliding requirements are found at 40 CFR §122.44(1) of USEPA's NPDES regulations. Application of anti-backsliding is separate from implementation of the antidegradation policy.

A. Eligibility Requirements

Before any permit action which might lower water quality is considered, it must first be demonstrated that two conditions are met:

1. water quality exceeds that necessary to meet standards, and
2. proposed effluent limitations will not result in violations of water quality standards.

This applies to proposed new dischargers, existing dischargers with anticipated influent or production increases, and existing dischargers without influent or production increases. For proposed new dischargers, it must also be demonstrated that the new facility proposes to build appropriate treatment, or apply BMP's.

B. What Constitutes "Lowering of Water Quality"?

Questions have arisen concerning the definition of "lowering of water quality". In a practical sense, the question is whether an increased pollutant load constitutes a lowering of water quality even if the increase is so small that no significant change in water quality can be demonstrated.

In the strictest sense, the answer is yes, but this must be tempered with practical considerations to ensure that scarce pollution control resources are used judiciously. Consequently, the Region will

consider that antidegradation requirements have been satisfied where it is demonstrated that there will be no significant lowering of water quality.

The definition of a "significant" change will be left up to individual States, subject to Regional approval.

The State could for example, set an absolute or percent change in predicted ambient conditions which would be considered "insignificant". It is expected that the designated cutoff would be different for different categories of substances, i.e., it would be smaller for persistent or carcinogenic substances than for nonpersistent substances. The basis for the cutoff would need to be justified. Proposed changes in technology-based limits on effluent limited waters could be converted to mass-balance or similar calculations for use of the percent cutoff approach.

The above substance specific alternatives do not address the possibility of additive or synergistic effects, however. Therefore, the discharger may have to submit results from appropriate bioassay(s) to demonstrate that such interactions will not inadvertently result in toxicity in the receiving waters.

The approach or approaches which the State proposes to use should be fully documented and justified in its antidegradation policy implementation procedures.

If the State chooses to establish de minimis tests, due consideration must also be given to the possibility that repeated or multiple "insignificant" changes could cumulatively cause significant changes in water quality.

C. Demonstration of "Important Economic or Social Development in the Area"

The Federal antidegradation policy requires a demonstration that lowering water quality is "necessary to accommodate important economic or social development in the area in which the waters are located". This demonstration is not intended to be of the same magnitude or stringency as the "widespread social and economic impact" test for variances and downgradings of use designations.

The Region recognizes that the definition of "important" development needs to be flexible to accommodate differences in State circumstances. In the interest of flexibility, the Region is therefore defining only the minimum economic/social demonstration considered acceptable for purposes of antidegradation policy implementation. To meet the minimum requirements, the discharger must demonstrate to the satisfaction of the State pollution control agency and Region V that lowering of water quality is necessary to accommodate:

1. new production by a new discharger; or
2. industrial production which cannot be accommodated by the current treatment facility while maintaining consistent compliance with current effluent limits even though the current facility is appropriate and is optimally maintained and operated; or
3. increased loading to a municipal wastewater treatment plant because of community growth, which cannot be accommodated by the current treatment facility while maintaining consistent compliance with current effluent limits even though the current facility is appropriate and is optimally maintained and operated; or

4. other circumstances deemed analogous to 1-3.

After identifying any such increased production or population growth in the area in which the waters are located, the State must make a specific finding that such increased production or growth is necessary for important social and economic development.

Consistent compliance with effluent limits is defined as 99 percent compliance with daily maxima, and 95 percent compliance with monthly averages. If consistent compliance can be maintained, then lower water quality is not "necessary", and is therefore not permissible. Where a discharger claims that consistent compliance cannot be maintained, it must also be determined that the treatment facility is appropriate, and is optimally operated and maintained. Inappropriate facilities or mediocre operation and maintenance are not acceptable justification for lowering water quality.

However, a facility may be considered for relaxed permit limits if the discharger achieves consistent compliance through extraordinary means, such as disproportionate operation and maintenance costs for best professional judgment (BPJ) limitations, or production shutdown during critical wasteload allocation periods.

In addition to the factors listed above, the State should consider whether the potential lowering of water quality is in the public interest. The addition of this "public interest" condition provides the mechanism whereby the State pollution control agency can override an approval based on 1-4 above, if there is a compelling public opinion or environmental reason to do so.

The States are strongly encouraged to implement more stringent criteria for defining "necessary economic and social development".

A more extensive economic analysis could require the discharger to demonstrate the extent to which the proposed decrease in water quality would create an increase in economic or social development, and why the change in water quality is necessary to achieve such development. A discharger could, for example, document expected growth in the following factors:

- area employment,
- direct and indirect income, and/or
- the community tax base.

Alternatively, this step could also be addressed by demonstrating the negative economic or social effects of the additional cost necessary to maintain existing water quality, e.g., land treatment or advanced treatment.

D. Public Participation and Intergovernmental Cooperation

Public participation and intergovernmental cooperation are essential elements of antidegradation policy implementation. Potential participants must explicitly be made aware of antidegradation policy issues and the potential impact of any lowering of water quality.

To this end, the Region recommends that any public notice related to potential lowering of water quality should address, or contain explicitly reference the availability of documents which address, at least the following topics:

1. statement of the State's antidegradation policy;
2. specific identification of substances for which effluent limit relaxation is being proposed;

3. description of the current level of water quality;
4. description of the impact that the proposed action will have on water quality;
5. summary of other actions that have lowered water quality and determination of cumulative impacts;
6. de minimis test justification (if appropriate);
7. important social and economic development demonstration in support of effluent limit relaxation or new discharge (if appropriate);
8. type of substance involved (e.g., threshold/non-threshold, persistent/nonpersistent) and known and suspected environmental effects; and
9. identity of other appropriate agencies which have been notified of the proposed action.

While formal notice of intent to authorize degradation of existing water quality is required only at the time an NPDES permit is public noticed, it is both advisable and prudent to inform interested and affected parties as early in the process as possible.

E. Deriving Effluent Limits

In those cases where relaxed effluent limitations are justified, or where limits are being derived for a new discharger, the permit writer must set appropriate effluent limitations. In practice, proposed effluent limits will actually be derived prior to starting the anti-degradation eligibility procedures. Whatever the precise sequence of events, the limits finally incorporated into the proposed permit must reflect the effluent quality achievable by the facility. This

principle is already articulated in several places in the Federal regulations for various circumstances: 40 CFR 122.62(a)(17), 40 CFR 122.44(1)(2)(i), and 40 CFR 133.105(f).

When new effluent limits are added to an existing permit for parameters not previously limited in that permit, and the effluent quality has not changed, an antidegradation demonstration is not necessary. The proposed limit should reflect the effluent quality achieved by the facility.

F. Antidegradation Implementation Without Numerical NPDES Limits

NPDES permits do not routinely contain numerical limits for all of the substances found in a discharger's effluent. Nevertheless, all substances are subject to antidegradation policy implementation, whether or not they are specifically limited in the permit. To apply antidegradation to substances not currently limited in a permit, the State can utilize the notification procedures specified in 40 CFR 122.42, requiring dischargers to notify the State pollution control agency of any actual or anticipated change in effluent characteristics, as compared with those existing at the time the permit was issued.

Processing a request for increased discharge through the notification procedure is essentially the same as processing a request for relaxed permit limits. The only significant difference is that an actual permit modification may not be required. All other requirements must be met, including those for public participation and intergovernmental cooperation.

III. OTHER ANTIDegradation CONSIDERATIONS

A. Applicability of Antidegradation to All Chemical Pollutants

Antidegradation is applicable to all chemical pollutants, even though there is a substantial variation in physical, chemical, and biological properties among chemical pollutants, because there are environmental benefits to be gained from water quality better than the minimum prescribed by water quality standards, for all categories of chemicals.

For example, by definition, threshold chemicals are believed to not elicit "unacceptable" effects until some critical (threshold) concentration is exceeded. However, the absence of "unacceptable" effects does not preclude the occurrence of "adverse" effects at, and possibly even below, the threshold (Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, USEPA, Draft, March 4, 1985).

Nonconservative chemicals can also have more impact than their temporary nature might imply. BOD loadings, for instance, have an inverse proportional effect on dissolved oxygen, which itself may have a continuous direct relationship to the quality of aquatic life.

For conservative chemical pollutants, the benefits are self-evident. A conservative chemical will persist in the environment for a long time, if not indefinitely; continued loading of conservative chemicals is therefore likely to result in accumulation. The potential for accumulation to deleterious levels is evident, and is the basis for minimizing the discharge of such substances, wherever possible.

Non-threshold-chemicals by definition, have no safe level. This category includes many of the carcinogens, mutagens, and teratogens. States are urged to apply more stringent antidegradation criteria to this category of chemicals.

B. Categories of State Waters

The Federal antidegradation policy specifies that the water quality of outstanding National resource waters (ONRW's) shall be maintained and protected. There are no exceptions permitted in this case; water quality may not be degraded under any circumstances.

The Region recognizes that some waters in each State may have special resource values which should be afforded a level of protection beyond that required state-wide for high quality waters, but not as stringent as for ONRW's. The States are therefore encouraged to create an intermediate category with an appropriate level of protection.

C. Nonpoint Sources and Clean Water Act Sections 401 and 404

As part of the requirement that high quality waters be maintained and protected, the Federal antidegradation policy stipulates that the States shall achieve all cost-effective and reasonable best management practices for nonpoint source control. This provision makes it the State's responsibility to work towards nonpoint source control, and to ensure that Section 401 certifications and Section 404 permit issuance take antidegradation policy into consideration. These subjects should be addressed in the State's implementation procedures.

D. Cross-Media Effects

The Region recognizes that cross-media effects may be an essential component in some antidegradation determinations. Since a basic

principle of environmental protection is the minimization of adverse environmental effects in all media, it is recommended that the State antidegradation procedures should at least identify the need to determine relative environmental impacts across media, and eventually establish systematic procedures for doing so.