

# **Exhibit A**

**Excerpt of the U.S. EPA's *Water Quality Standards Handbook***



# Water Quality Standards Handbook:

## Second Edition



"... to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

Contains Update #1  
August 1994

Section 101(a) of the Clean Water Act

**WATER QUALITY STANDARDS  
HANDBOOK  
SECOND EDITION**

Water Quality Standards Branch  
Office of Science and Technology  
U.S. Environmental Protection Agency  
Washington, DC 20460

September 1993

Contains update #1  
August 1994

EPA has produced guidance on flow considerations (USEPA, 1986d) which calculates design flows based on steady-state modeling. Two design flows are calculated, one for the criterion continuous concentration (CCC) and one for the criterion maximum concentration (CMC). The CCC is the 4-day average concentration of a pollutant in ambient water that should not be exceeded more than once every 3 years on average. The CCC is therefore, a chronic concentration. The CMC is a 1-hour average concentration in ambient waters that should not be exceeded more than once every 3 years on average. The CMC is an acute concentration. Note that when a criterion specifies a 4-day average concentration that should not be exceeded more than once every 3 years, this should not be interpreted as implying that a 403 low-flow is appropriate for use as the design flow.

EPA had recommended interim use of the 1Q5 and 1Q10 low-flow as the CMC design flow and the 7Q5 and 7Q10 low-flows as the CCC design flow for unstressed and stressed systems, respectively. Further consideration of stress placed on aquatic ecosystems resulting from exceedences of water quality criteria indicates that there is little justification for different design flows for unstressed and stressed systems. All ecosystems have been changed and, therefore, stressed as a result of human activities. Therefore, the recommended design flow for CMC is 1Q10 and for CCC is 7Q10. States may designate other design or low-flows but such flows, must be scientifically justified. That many streams within a State have no flow at 7Q10 is not adequate justification for designating alternative flows.

[↑Top of Page](#)

### 5.3 Variances From Water Quality Standards

EPA first formally indicated allowability of State WQS variance provisions in [Decision of the General Counsel No. 44, dated June 22, 1976 \(PDF\)](#) (8 pp., 338 K), which specifically considered an Illinois variance provision, and expanded upon the acceptability of State WQS variance procedures in [Decision of the General Counsel No. 58 \(OGC No. 58\) \(PDF\)](#) (11 pp., 533 K), dated March 29, 1977 (published, in part, at 44 F.R. 39508 (July 6, 1979)). Subsequent guidance has elaborated on or clarified the policy over the years. For example, the Director of EPA's Criteria and Standards Division transmitted [EPA's definition of a WQS variance \(PDF\)](#) (1 pp., 78K) to the Regional WQS Coordinators on July 3, 1979, and on March 15, 1985, the Director of the Office of Water Regulations and Standards, responding to questions raised on WQS variances, issued a [reinterpretation of the factors that could be considered when granting variances \(PDF\)](#) (2 pp, 13K). Variance procedures involve the same substantive and procedural requirements as removing a designated use (see [section 2.7](#), this Handbook), but unlike use removal, variances are both discharger and pollutant specific, are time-limited, and do not forego the currently designated use.

A variance should be used instead of removal of a use where the State believes the standard can ultimately be attained. By maintaining the standard rather than changing it, the State will assure that further progress is made in improving water quality and attaining the standard. With a variance, NPDES permits may be written such that reasonable progress is made toward attaining the standards without violating section 402(a)(1) of the Act, which requires that NPDES permits must meet the applicable water quality standards.

State variance procedures, as part of State water quality standards, must be consistent with the substantive requirements of 40 CFR 131. EPA has approved State-adopted variances in the past and will continue to do so if:

- each individual variance is included as part of the water quality standard;
- the State demonstrates that meeting the standard is unattainable based on one or more of the grounds outlined in 40 CFR 131.10(g) for removing a designated use;
- the justification submitted by the State includes documentation that treatment more advanced than that

1B3 is biologically based and indicates an allowable exceedence of once every 3 years. It is determined by EPA's computerized method (DFLOW model);  
7Q10 is the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years determined hydrologically;  
4B3 is biologically based and indicates an allowable exceedence for 4 consecutive days once every 3 years. It is determined by EPA's computerized method (DFLOW model);  
30Q5 is the lowest average 30 consecutive day low flow with an average recurrence frequency of once in 5 years determined hydrologically;  
and  
Harmonic mean flow is a long term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows.

Exhibit 5-1: EPA recommendations for Design Flows

#### Updated Information

- [Case Studies of Alternatives to Use Removal \(2005\) \(PDF\)](#) (14 pp, 830K) – These case studies, developed by States and EPA, present initial examples of approaches and tools that provide potential alternatives to changing long-term underlying designated uses and criteria.
- [Advanced Notice of Proposed Rulemaking for Water Quality Standards \(1998\)](#): See pages 36759 to 36761 for information on EPA's thinking in 1998 on EPA approval of variances, the situations where they might be appropriate, and the use of variances (and similar tools) to meet water quality standards

- required by sections 303(c)(2)(A) and (B) has been carefully considered, and that alternative effluent control strategies have been evaluated;
- the more stringent State criterion is maintained and is binding upon all other dischargers on the stream or stream segment;
  - the discharger who is given a variance for one particular constituent is required to meet the applicable criteria for other constituents;
  - the variance is granted for a specific period of time and must be rejustified upon expiration but at least every 3 years (Note: the 3-year limit is derived from the triennial review requirements of section 303(c) of the Act.);
  - the discharger either must meet the standard upon the expiration of this time period or must make a new demonstration of "unattainability";
  - reasonable progress is being made toward meeting the standards; and
  - the variance was subjected to public notice, opportunity for comment, and public hearing. (See section 303(c)(l) and 40 CFR 131.20.) The public notice should contain a clear description of the impact of the variance upon achieving water quality standards in the affected stream segment.

(9/15/93)

pp.: 5-1-5-12

[↑Top of Page](#)

[EPA Home](#) | [Privacy and Security Notice](#) | [Contact Us](#)  
Last updated on Friday, April 13, 2012

[News by E-mail](#)[EPA Mobile](#)[Widgets](#)[News Feeds](#)[Podcasts](#)

# **Exhibit B**

**U.S. EPA General Counsel Ruling No. 58**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C.

---

DECISION OF THE GENERAL COUNSEL ON MATTERS OF LAW  
PURSUANT TO 40 C.F.R. SECTION 125.36(m)

No. 58

---

In the matter of National Pollutant Discharge Elimination System, Permit Number NY 0001368, for Bethlehem Steel Corporation, Lackawanna, New York, the Presiding Officer has certified one issue of law to the General Counsel for decision pursuant to 40 C.F.R. §125.36(m). The parties, having had an opportunity to provide written briefs in support of their respective positions, present the following issue:

QUESTION PRESENTED

"Does EPA have statutory authority to establish thermal effluent limits, based on receiving water flow and characteristics when such requirements have not been included in a water quality certification, and no officially promulgated thermal effluent guidelines and standards exist?"

After reading the briefs and analyzing the parties' positions, I believe this question might be more accurately phrased and addressed as three distinct questions.

QUESTION OF LAW NO. 1

"Does EPA have the statutory authority to establish thermal effluent requirements, based on State water quality standards, when such requirements have not been included in a State certification under Section 401 of the FWPCA, and when the State certification specifically includes certain less stringent thermal limitations?"

ANSWER

Yes, EPA has both the authority and the obligation, pursuant to Section 301(b)(1)(C), to assure that NPDES permits contain sufficient limitations "necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations." This obligation exists independently of State certification.

DISCUSSION

The FWPCA clearly establishes an obligation for the permitting authority to insure that permits contain effluent limitations necessary to meet State water quality standards. Section 301(b)(1)(C). (See Decisions of General Counsel, #13, #44) The Act also provides that States may certify specific limitations as necessary to comply with Section 301 (including 301(b)(1)(C)) of the Act or with "any other appropriate requirement of State law." Section 401(d). Limitations contained in a State certification must be included in a NPDES permit. EPA has no authority to ignore State certification or to determine whether limitations certified by the State are more stringent than required to meet the requirements of State law. (See Decision of General Counsel, #44) In the absence of State certification, EPA must, pursuant to Section 301(b)(1)(C), independently interpret and apply State water quality standards. (Cf. EPA v. California, 96 S. Ct. 2022, 2032 (1976)) The question presented herein, however, has not previously been addressed: when the State does certify specific limitations as

necessary to meet water quality standards, does the Administrator still retain his obligation to independently interpret and apply State water quality standards so as to ensure compliance with Section 301(b)(1)(C)? I believe the answer is clearly that the Administrator does retain such obligation since his authority pursuant to Section 301(b)(1)(C) is independent of State certification.

Any other answer would illegally restrict the Administrator from insuring that a permit met all the relevant requirements of the Act. For instance a State might certify that the technology-based effluent limitations under Section 301(b)(1)(A) were sufficient to meet water quality standards. EPA, however, might know that additional, more stringent limitations are required to meet the applicable State water quality standard. Must EPA ignore such information merely because of the State certification? Or suppose the State certifies specific limitations which are less stringent than the limitations contained in a 303(e) plan submitted to EPA by the State and approved by EPA? Is EPA legally required to ignore the 303(e) plan recommendations? Or suppose the State certifies specific limitations for some pollutants but ignores other pollutants which are included in the water quality standards. Is EPA to ignore such other water quality standards? For the Administrator to blindly accept State certification as the final authority in any of these cases, he would be forced to ignore the language of Section 301(b)(1)(C) and his duty under the Act to assure compliance therewith.

In enacting Section 401, Congress clearly intended to give the States an opportunity to assure that federally-issued NPDES permits contained limitations necessary to implement the State's water quality standards. There is no indication in the Act, or in the legislative history, however, that Section 401 was intended to limit the authority and obligation of EPA to independently assess the need for more stringent conditions to meet the requirements of Section 301(b)(1)(C).

QUESTION OF LAW NO. II

What are the relevant water quality standards applicable to this NPDES permit?

ANSWER

The relevant water quality standards are those in effect on the date of initial permit issuance, August 30, 1974.

DISCUSSION

The Administrator has previously determined the general rule that the appropriate water quality standards to be applied to a permit are those which were in effect at the time of initial permit issuance. (See Decision of the Administrator, In the Matter of U. S. Pipe and Foundry Company, NPDES Appeal No. 75-4, October 10, 1975) The State thermal standards adopted in July 1969 were the standards in effect on the date of initial permit issuance. At the time of initial permit issuance, such standards had not been approved by EPA. Nevertheless, the standards were valid under State law and are binding upon EPA pursuant to Section 301(b)(1)(C) until and unless EPA supersedes such standards

by promulgating under the authority of Section 303(b) or 303(c). State water quality standards exist independently of EPA approval or disapproval (see attached memo, dated February 3, 1975) and do not become Federal standards through the EPA approval process.

QUESTION OF LAW NO. III

"In developing limitations pursuant to Section 301(b)(1)(C), should EPA consider a provision contained in the State's water quality standards such as a "grandfather" clause which is not a water quality standard as defined by the FWPCA and which does not relate to receiving water uses or criteria?"

ANSWER

No, EPA is not required and in fact is without authority to consider provisions of State law which are not water quality standards, treatment standards, or compliance schedules in determining appropriate limitations under Section 301(b)(1)(C). EPA must ignore such requirements.

DISCUSSION

The "Criteria Governing Thermal Discharges" adopted by the State of New York in July, 1969, include the following water quality standards for "non trout" waters:

"The water temperature at the surface of a stream shall not be raised to more than 90°F at any point. Further, at least 50 percent of the cross sectional area and/or volume of the flow of the stream including a minimum of 1/3 of the surface as measured from shore-to-shore shall not be raised to more than 5°F over the temperature that existed before the addition of heat of artificial origin or to a maximum of 86°F whichever is less..."

The thermal criteria certified by the State included only the first sentence of the standard cited above, i.e., a 90°F limit for the discharge. EPA however included in the permit the additional language found in the standard.

Although the State of New York did not submit a brief, it appears that the State's failure to certify the entire thermal criteria is based upon another portion of its "Criteria Governing Thermal Discharges." This provision states as follows:

EXTENT OF APPLICABILITY OF CRITERIA TO EXISTING DISCHARGES

In determining whether a discharge existing prior to the adoption of the above criteria complies with the applicable standard for thermal discharges ('None alone or in combination with other substances or wastes in sufficient amount or at such temperature as to be injurious to fish life....or impair the waters for any other best usage... (6 NYCRR 701 3 et. seq.)), these criteria are intended only to be a frame of reference. (emphasis added)

This "grandfather" clause which distinguishes between existing discharges such as Bethlehem and new dischargers has been the subject of continuing controversy between Federal authorities and the State of New York since 1969. The existence of this clause was a major factor in the failure of the Federal Water Pollution Control Administration to approve the 1969 thermal standards.

Revised thermal standards adopted by New York in September, 1974 also included a clause exempting dischargers from the numerical thermal criteria on the basis of age. On February 25, 1975, the EPA Regional Administrator approved the numerical criteria submitted by the State

but exempted the grandfather clause from his consideration. He determined that the grandfather clause was inconsistent with Section 316(a) of the FWPCA and in addition was incompatible with the nature of water quality standards since it differentiated among dischargers on the basis of age and was unrelated to the existing or desired quality of the receiving water. (40 Fed. Reg. 13216-17, March 25, 1975)

I also believe that a "grandfather clause" is not an acceptable part of a water quality standard. Therefore I believe as a matter of law that the Region was correct in ignoring such a clause in its determination of the thermal water quality standards which were applicable to this permit.

In reaching this conclusion, I do not mean to suggest that all variance procedures contained in State water quality standards are illegal and unacceptable under the FWPCA. In Decision of the General Counsel #44, I specifically considered the question of an Illinois variance procedure. The Illinois procedure allowed for a limited exception to meeting a water quality standard upon a showing that compliance "would impose an arbitrary or unreasonable hardship." In my decision, I held that EPA would not itself provide for the hearing to determine whether a discharger qualified for such a variance, but would incorporate a State-determined variance in a NPDES permit.

It is important to distinguish the type of variance in Illinois from the variance presented by this case. Section 101(a)(2) of the

FWPCA sets as an interim goal the achievement of water quality wherever attainable, that provides for the "protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" by July 1, 1983. In order to attain this goal, EPA has required States to set their water quality standards at such levels "wherever attainable." EPA regulations provide that "in determining whether such standards are attainable for any particular segment, the State should take into consideration environmental, technological, social, economic, and institutional factors." 40 C.F.R. 130.17(c)(1). EPA's regulations are more specific in regard to downgrading existing water quality standards. Standards may be lowered only when the State can demonstrate that one of three factual situations exists:

(i) The existing designated use is not attainable because of natural background;

(ii) The existing designated use is not attainable because of irretrievable man-induced conditions; or

(iii) Application of effluent limitations for existing sources more stringent than those required pursuant to Section 301(b)(2)(A) and (B) of the Act in order to attain the existing designated use would result in substantial and widespread adverse economic and social impact.

Thus, under these regulations, a State may downgrade a water quality standard for a particular stream segment if attaining the standard will require treatment in excess of best available technology ("BAT") for industrial point sources or best practicable waste

treatment technology ("BPWTT") for publicly-owned treatment works, and such additional treatment would result in "substantial and widespread" impact.

A number of States, however, have adopted a somewhat different approach. Rather than downgrading the standard for an entire stream, or stream segment, some States have maintained the standard, but provided that individual dischargers may receive variances for a limited time period from meeting the standards. This approach appears to be preferable environmentally. The more stringent standard is maintained and is binding upon all other dischargers on the stream or stream segment. Even the discharger who is given a variance for one particular constituent (e.g., chlorine) will be required to meet the applicable criteria for other constituents. The variance is given for a limited time period and the discharger must either meet the standard upon the expiration of this time period or must make a new demonstration of "unattainability."

EPA will accept such variance procedures as part of State water quality standards as long as they are consistent with the substantive requirements of 40 C.F.R. 130.17. Therefore, variances can be granted by States only when achieving the standards is "unattainable." In demonstrating that meeting the standard is unattainable, the State must demonstrate that treatment in excess of that required pursuant to Section 301(b)(2)(A) and (B) of the Act is necessary to meet the standard and must also demonstrate that requiring such treatment will result in substantial and widespread economic and social impact which

exceeds the positive economic and social impact of enhanced water quality. EPA Regional Administrators should not accept State variance determinations unless they are accompanied with an adequate record to support the determinations.

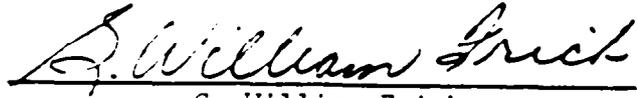
The justification submitted by the State should include documentation that treatment more advanced than that required by Sections 301(b)(2)(A) and (B) has been carefully considered and that alternative effluent control strategies have been evaluated.

Since State variance proceedings involve revisions of water quality standards, they must be subjected to public notice, opportunity for comment, and public hearing. (See Section 303(c)(1) and 40 C.F.R. 130.17(a)). The public notice should contain a clear description of the impact of the variance upon achieving water quality standards in the affected stream segment.

Total maximum daily loads included in any plan prepared pursuant to Sections 208 or 303(d) and (e) must be adjusted to reflect the variance. The granting of a variance to any one discharger should not effect the load allocations or effluent limitations required for other dischargers on the steam segment.

As noted above, however, the exemption procedure developed by New York for thermal dischargers does not in any way meet these requirements. The New York procedure provides a blanket exemption for all dischargers of a certain age. This exemption from otherwise applicable standards is not related to any demonstration or determination of "attainability" and does not incorporate any economic or environmental test for the particular

discharger. For the reasons noted above, such an exemption procedure cannot be considered as part of a water quality standard under Section 303 of the Act.



G. William Frick  
General Counsel

20 MAR 1977

Dated: \_\_\_\_\_